

DENON

Hi-Fi AV Surround Receiver

SERVICE MANUAL

MODEL AVR-810/810G

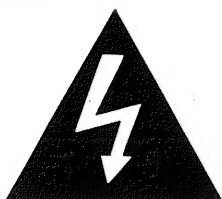
AV SURROUND RECEIVER



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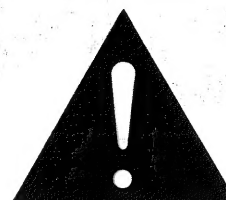
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NIPPON COLUMBIA CO., LTD.



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK). NO USER SERVICE-
ABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS
APPLIANCE TO RAIN OR MOISTURE.**

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION

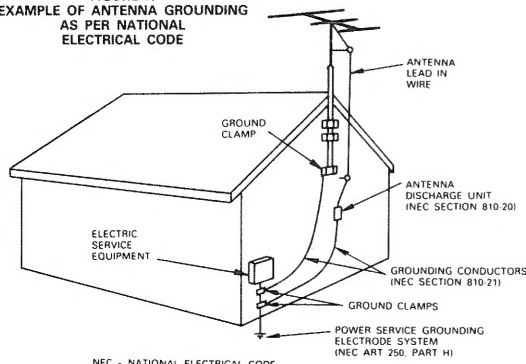
POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

IMPORTANT SAFEGUARDS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Cleaning – Unplug this video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments – Do not use attachments not recommended by the video product manufacturer as they may cause hazards.
7. Water and Moisture – Do not use this video product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
8. Accessories – Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
- 8A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
9. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhere to.
10. Power Sources – This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.
11. Grounding or Polarization – This video product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
12. Power-Cord Protection – Power-Supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.



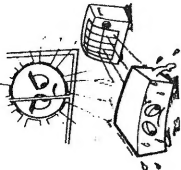



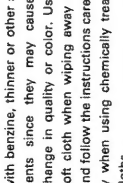
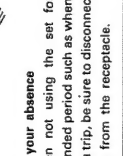
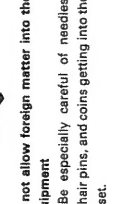

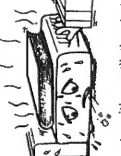
FIGURE A
EXAMPLE OF ANTENNA GROUNDING
AS PER NATIONAL
ELECTRICAL CODE



NEC - NATIONAL ELECTRICAL CODE

13. Protective Attachment Plug – The appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.
14. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
15. Lightning – For added protection for this video product receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power-line surges.
16. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17. Overloading – Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
18. Object and Liquid Entry – Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind of the video product.
19. Servicing – Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. Damage Requiring Service – Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power-supply cord or plug is damaged.
 - b. If liquid has been spilled, or objects have fallen into the video product.
 - c. If the video product has been exposed to rain or water.
 - d. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
 - e. If the video product has been dropped or the cabinet has been damaged.
 - f. When the video product exhibits a distinct change in performance – this indicates a need for service.
21. Replacement Parts – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
22. Safety Check – Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.

NOTE ON USE

 <p>Be careful of high temperatures</p> <ul style="list-style-type: none"> Do not place the set in a location where it will be exposed to direct sunlight or near a heating appliance. <p>Caution on rack/cabinet installation</p> <ul style="list-style-type: none"> Avoid installing the set in a closed-type rack. When installing in a rack or cabinet, provide a sufficiently large ventilation opening to promote heat radiation. 	 <p>Caution on humidity, water, and dust</p> <ul style="list-style-type: none"> Do not place the set in a location where there is high humidity or a lot of dust. Flower vases or other items containing water should not be placed on top of the set. 	 <p>Do not open the case</p> <ul style="list-style-type: none"> Opening the top cover or the bottom plate of the case and inserting your hand is dangerous. Do not open the case. If some trouble arises with the performance of the set, remove the power plug soon and contact the store where the set was purchased, or a nearby dealer.
 <p>Care of the case</p> <ul style="list-style-type: none"> Avoid the use of pesticides near the set as well as wiping the case with benzine, thinner or other solvents since they may cause a change in quality or color. Use a soft cloth when wiping away dirt and follow the instructions carefully when using chemically treated cloths. 	 <p>Care with the power cord</p> <ul style="list-style-type: none"> When removing the plug from the receptacle, do not pull the power cord; be sure to hold the plug when removing it. 	 <p>During your absence</p> <ul style="list-style-type: none"> When not using the set for an extended period such as when taking a trip, be sure to disconnect the plug from the receptacle.
 <p>Do not allow foreign matter into the equipment</p> <ul style="list-style-type: none"> Be especially careful of needles, hair pins, and coins getting into the set. 	 <p>Do not block the ventilation holes of the set</p> <ul style="list-style-type: none"> Blocking of the ventilation holes will lead to damage of the set. The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set. 	 <p>For sets with ventilation holes</p> <p>Do not block the ventilation holes of the set</p> <ul style="list-style-type: none"> Blocking of the ventilation holes will lead to damage of the set. The ventilation holes are very important for heat radiation from within the set. Care must be taken since placing an object against the holes will result in an extreme rise of temperature within the set.

- Read this manual carefully to ensure that you take full advantage of all the features of this receiver. Keep the manual in a safe place for future reference.
- Be sure to check that the date of purchase and the store's name of purchase have been filled in properly on the warranty issued at your store of purchase.

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Check that the following parts are included in the package aside from the main unit:

- Operating Instructions
- Remote control unit (RC-139)
- Batteries (R6P/AA)
- AM loop antenna
- FM antenna adapter
- FM indoor antenna

BEFORE USING

Read the following cautions carefully before using the receiver:

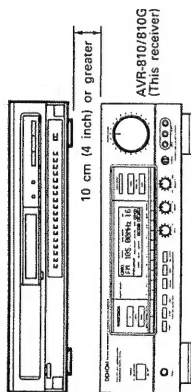
- Moving the set**
 - Be sure to unplug the power cord and disconnect other cords connecting the receiver to other audio units before moving the receiver to prevent damaging or short-circuiting the cords.
- Before turning on the power switch**
 - Check again to make sure that all connections are correct and that there are no problems with the connection cords. Be sure to turn the power OFF before disconnecting or connecting cords.
- Retain the operating instructions**
 - After reading this manual, store it in a safe place.
 - The illustrations used in this manual may differ somewhat from the actual receiver.

2 INSTALLATION PRECAUTIONS

Using this receiver or other electronic equipment containing microprocessors simultaneously with a TV may result in noise in the sound or picture. If this should happen, take the following steps:

- Install the receiver as far as possible from the TV set.
- Keep the antenna lines of the TV as far as possible from the receiver's power cord and connection cables.
- This problem is especially frequent when using indoor antennas or 300 ohm feeder lines. We recommend using outdoor antennas and 75 ohm coaxial cables.

A note on stacking



For cooling purposes, do not place another AV component directly on top of the receiver. Be sure to leave a space of at least 10 cm (4 inch).

3 HANDLING PRECAUTIONS

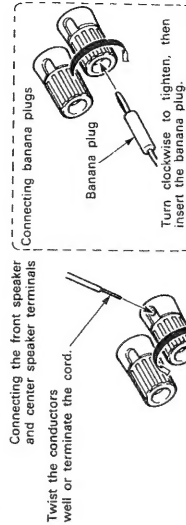
- **Switching the input function when the input jacks are unconnected**
Switching the input function when a component is not connected to the input jacks may result in the generation of click noise. If this should happen, turn down the MASTER VOLUME or connect a component to the input jacks.
- **Playback with Dolby Pro Logic**
The Dolby Pro Logic position provides optimum effectiveness for sources recorded with Dolby Surround. A different surround mode should be selected when playing back sources other than this type. Note in particular that when playing back monaural recording sources, the bypass mode or the simulated mode should be used. Other modes will not provide a suitable effect.
- **Muting of the PRE OUT jacks**
An electronic muting circuit has been connected to the PRE OUT jacks. This circuit greatly attenuates the output signal for approximately 7 seconds after the power has been switched on. Raising the volume during this operation will result in an extremely large output once the muting has ended, so volume adjustments should be made only after the completion of muting.
- **Rear output level while in the surround mode**
The rear level will seem small for sources other than Dolby Surround sources. The reason for this is that a rear playback signal is not contained in the software. When playing back such software with a surround function, the mode should be set to something other than Dolby Pro Logic surround. The rear output level may seem small for software having a small rear signal, even Dolby Surround sources.

4 CONNECTIONS

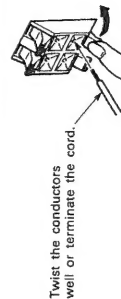
Speaker System Connections

- This receiver can accommodate connections of a total of five speakers including one set of front speakers, one set of rear speakers, and one center speaker.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (\oplus with \oplus , \ominus with \ominus). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.
- **Speaker Impedance**
Speakers with an impedance of 6 to 12 ohms can be connected for use as front, center and rear speakers.
- The protection circuit may operate or damage may occur when speakers with an impedance outside of the above range are used.

- 1 Peel off the insulation from the tip of the cord.
- 2 Twist the conductors.
- 3 Turn the speaker terminal counterclockwise to loosen it.
- 4 Insert the exposed portion of wire completely and turn the terminal clockwise to tighten it.

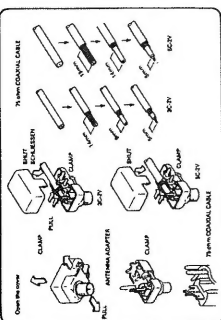


Connecting the front speaker and center speaker terminals

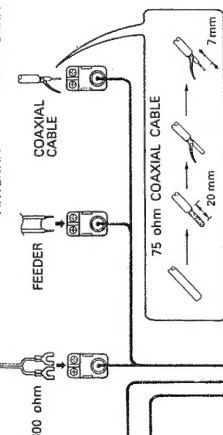


Connecting the rear speaker terminals

Audio Section



Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820.22 of the NEC that provides guidelines for grounding. Any cable shield or other conductive part of the cable shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

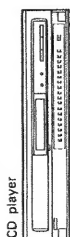


NOTE: When installing the turntable, be sure no metal parts are touching the top cover, as shown in the diagram.

Connecting a turntable

Connect the turntable's output cord to the AVR-810/810G's PHONO jacks, the left plug in the L jack, the right plug in the R jack.
* If humming is produced when the ground wire is connected, disconnect it.

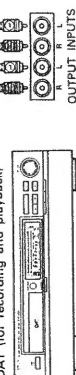
NOTE: Turntables with MC cartridges cannot be played on this receiver. Use a separately purchased head amplifier or a step-up transformer.



Connecting a CD player

Connect the CD player's analog output jacks to the AVR-810/810G's CD jacks, using pin-plug cords.

Connecting a DAT (for recording and playback)



Connecting a DAT (Digital Audio Tape) recorder

Connections for recording: Connect the DAT's analog recording input jacks (LINE IN or REC) to the AVR-810/810G's tape recording jacks (OUTPUT) using pin-plug cords.
Connections for playback: Connect the DAT's analog playback output jacks (LINE OUT or PB) to the AVR-810/810G's tape playback jacks (INPUT) using pin-plug cords.

Connecting tape decks

Connections for recording: Connect the tape deck's recording input jacks (LINE IN or REC) to the AVR-810/810G's tape recording jacks (OUTPUT) using pin-plug cords.
Connections for playback: Connect the tape deck's playback output jacks (LINE OUT or PB) to the AVR-810/810G's tape playback jacks (INPUT) using pin-plug cords.

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Use the AC OUTLETS for audio equipment only. Do not use them for hair driers, etc.
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- Precautions when connecting speakers**
If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

AC OUTLETS

AC Outlets are convenient for plugging in a TV tuner, turntable, tape deck, or some other component connected to the receiver.
• The power of these outlets is switched on and off by the receiver's POWER switch.
• These outlets will not be switched on when the power is set to ON-STANDBY with the remote control. When the receiver is in the standby mode, the outlets will be switched off.

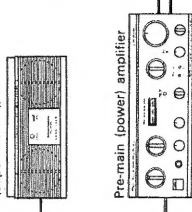
The polarities are indicated on the AVR-810/810G's power plug.
When the polarities are indicated on the receiver or other audio component used with the AVR-810/810G, we recommend connecting the side on which the polarity is indicated (the white side of the AC cord) to the ground side (the larger hole) of the power outlet.

PRE OUT jacks

Use these jacks when using another pre-main amplifier or a separate amplifier.

MONO

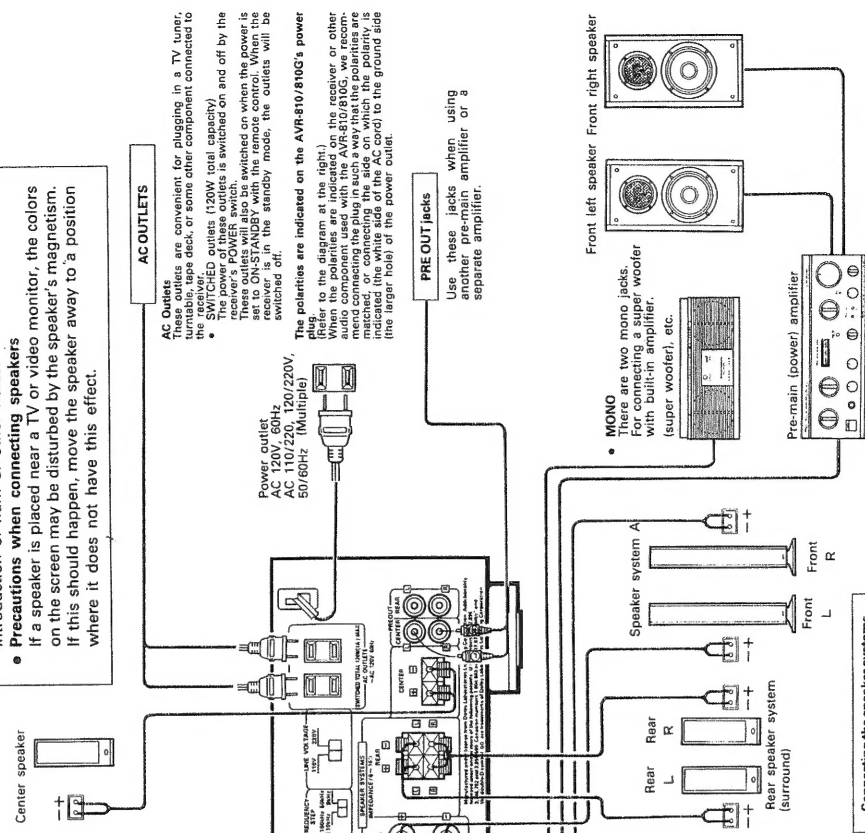
There are two mono jacks. For connecting a super woofer with built-in amplifier, (super woofer), etc.



Refer to Pages 10 and 11.

Connecting the speaker systems

Connect the speaker system from the left channel (as seen from the front) to the L terminals, the speaker system for the right channel to the R terminals.



Video Section

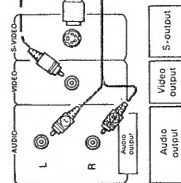
Connecting a DBS/BS tuner

- Connect the DBS/BS tuner's video output jack to the receiver's VIDEO DBS/BS-IN jack (yellow) using a 75 ohm video coaxial cable pin-plug cord.
- Connect the DBS/BS tuner's audio output jacks to the receiver's AUDIO DBS/BS IN jacks using pin-plug cords.



Connecting a video disc player (VDP), CDV, etc.

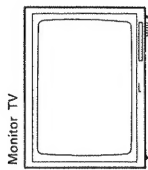
- Connect the video disc player's S-video output jack to the receiver's S-VIDEO VDP IN jack using an S-jack connection cord.
- Connect the video disc player's video output jack to the receiver's VIDEO VDP (yellow) jack using a 75 ohm video coaxial cable pin-plug cord.
- Connect the video disc player's audio output jacks to the receiver's AUDIO VDP jacks using pin-plug cords.



LD player, CDV player, etc.



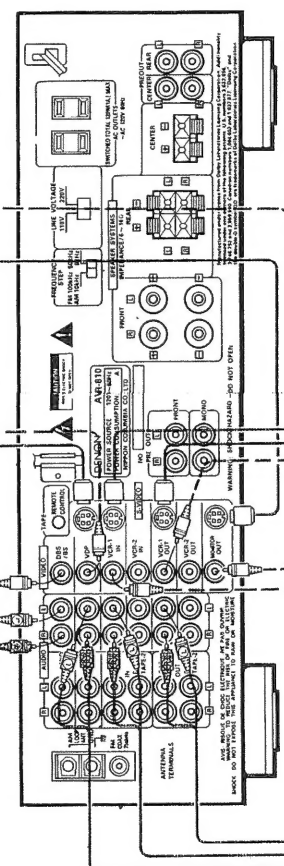
The AVR-810/810G is equipped with VIDEO AUX jacks on the front panel for playback of video equipment. This makes it possible to connect video equipment with video outputs as well as other equipment. The connections are the same as for a VDP.



Connecting a monitor TV

- Connect the TV's S-video input jack to the receiver's S-VIDEO MONITOR OUT jack using an S-jack connection cord.
- Connect the TV's video input jack to the receiver's VIDEO MONITOR OUT jack using a 75 ohm video coaxial cable pin-plug cord.

75 ohm video coaxial cable pin-plug cord
S-jack connection cord

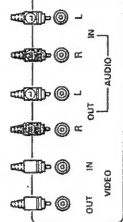


A note on the jacks

- The input selector for the S inputs and that for the pin jack inputs work in conjunction with each other. When a source without an S input is selected, no signal is output to the S-jack MONITOR OUT jack.

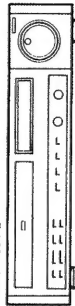
* Caution on using S-jacks

The S input and output jacks and the pin-jack input and output jacks on the AVR-810/810G have independent circuits, so the signals input to the S input jacks are only output from the S output jacks, and the signals input to the pin-jack input jacks are only output from the pin-jack output jacks. Remember this when connecting the AVR-810/810G to a component equipped with S jacks, and refer to the manuals of the different components.



Connect to the VCR2 jacks in the same way as for video deck 1.

Video deck 2



Connecting the S-jacks (VCR-1)

Connect the video deck's S-output jack to the receiver's S-VIDEO IN jack and the video deck's S-input jack to the receiver's S-VIDEO OUT jack using S-jack connection cords.

Connecting video decks (VCR)

- There are two sets of VCR jacks, allowing connection of two video decks for simultaneous recording and video copying.
- Connect the video deck's video output jack to the receiver's VCR-1 IN jack (yellow) and the video deck's video input jack to the receiver's VCR-1 OUT jack (yellow) using 75 ohm video coaxial cable pin-plug cords.

Connecting the audio input and output jacks

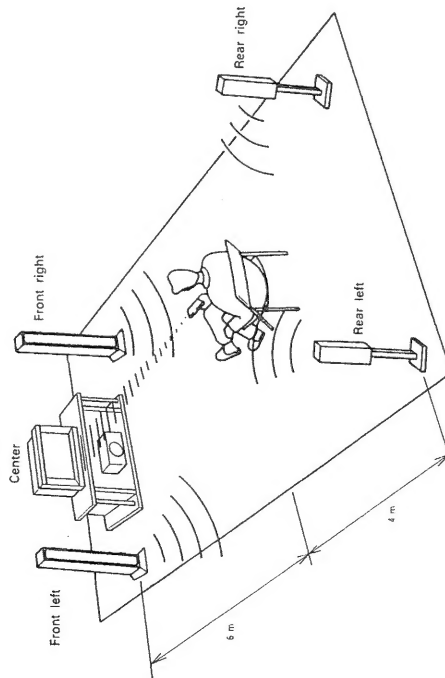
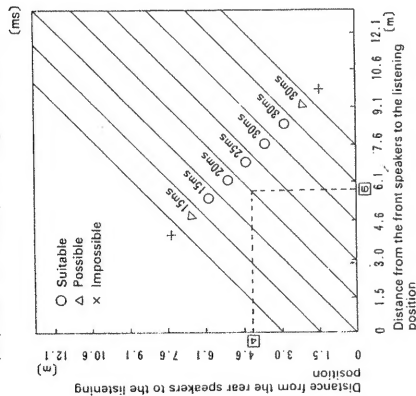
- Connect the video deck's audio output jacks to the receiver's AUDIO VCR-1 IN jacks and the video deck's audio input jacks to the receiver's AUDIO VCR-1 OUT jacks using pin-plug cords.
- A second video deck may be connected to the VCR-2 jacks in the same way.

5 DOLBY PRO LOGIC SURROUND

• Setting the delay time

The optimum delay time will differ depending on the listening position. Referring to the right chart, set the optimum delay time for your room's space and setting position. For example, when the distance from the front speakers to the listening position is 6 m and that from the rear speakers to the listening position is 4 m, the optimum delay time will be 20 ms.

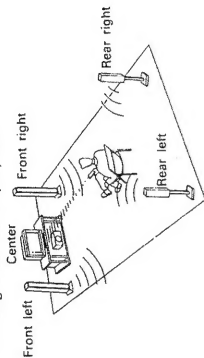
Listening position and optimum delay time for playback with Dolby Pro Logic surround



- **Adjustment of the Input Balance**
This unit is equipped with an auto input balance circuit which makes the need for adjustment of input balance unnecessary. The AUTO BALANCE indicator in the display will light up when the auto input balance operation is active.

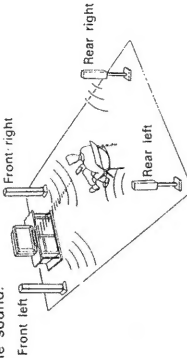
• **Speaker arrangement**

Ideally, center speakers should be used for Dolby Pro Logic surround playback.



NORMAL mode

Normal mode: This mode is suited for an arrangement in which the center channel speakers are smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel outputs signals greater than 100 Hz. The bass of the left and right channels increases the apparent deepness of the sound.



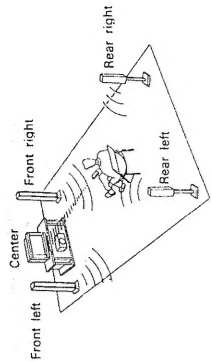
PHANTOM mode

Phantom mode: Use this mode when center channel speakers are not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this achieves an effect which is extremely close to that of five-channel reproduction although there are four channels.

• **Test tone**

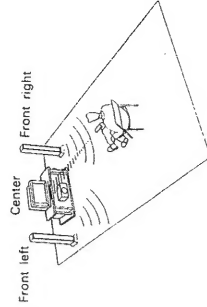
The test tone function is used to generate a test signal for adjusting the level of each channel in the Dolby Pro Logic surround mode. Before using Dolby Pro Logic surround, arrange the speakers as illustrated above and follow the procedure given here. Using the test tone, set the optimum volume balance for each speaker and set the volume and other controls so that each speaker can be heard at the same level. In the normal and wide modes the test tone is provided as the speakers are switched in the following order:

Adjustment of the test tone should be made with the remote control unit (RC-139).



WIDE mode

Wide mode: This mode is suited for an arrangement in which the center channel speakers are of the same grade as the left and right speakers. The entire sound band from low to high frequencies is output to the center channel to provide an exciting sound field for your enjoyment.



3-CH LOGIC

3-channel logic mode: Use this mode when rear channel speakers are not used. The rear channel information is fed to the front speakers to provide the surround effect.

Front left → Center → Front right → Rear

Use this signal to adjust the volume balance and set an optimum balance.

In the phantom mode the test tone is provided as the speakers are switched in the following order:

Front left → Front right → Rear

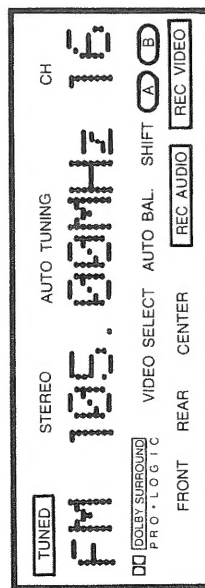
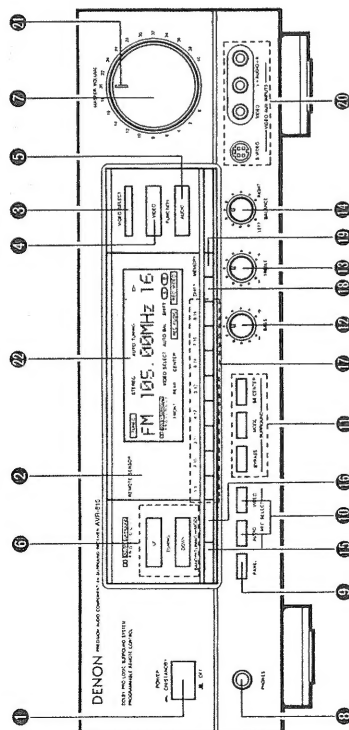
In the 3-channel logic mode the test tone is provided as the speakers are switched in the following order:

Front left → Center → Front right

Note that this receiver provides the test tone at 4-second intervals for the first two cycles and for 2-second intervals thereafter.

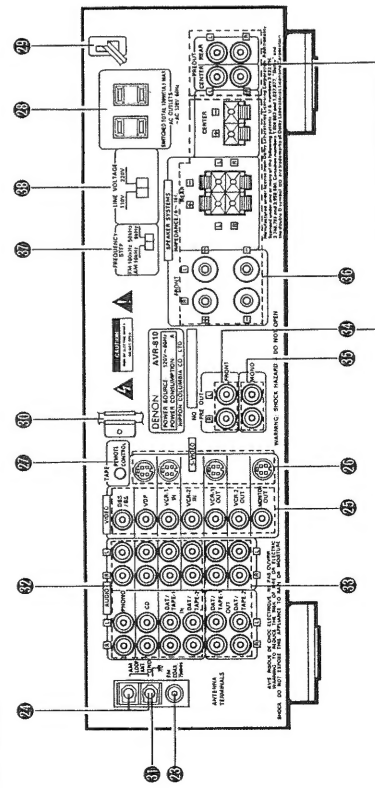
6 PART NAMES AND FUNCTIONS

Front panel



MULTI FUNCTION DISPLAY

Rear panel



- 1 **POWER switch**
ON/STANDBY
In this position, the power is on and the MASTER VOLUME LED is flashing.
Several seconds are required after the power is turned on before the set will operate (the LED stops flashing and remains lit). This is because a built-in muting circuit is activated to prevent noise when the power switch is turned on and off.
Set the switch to this position when using the included remote control unit (RC-139) to turn the power on and off.
OFF
In this position, the power and the LED are off. The power cannot be turned on and off with the remote control unit when the switch is in this position.
- 2 **REMOTE SENSOR**
This is the sensor of the wireless remote control unit.
Point the wireless remote control unit (RC-139) at this sensor when operating it.
- 3 **VIDEO SELECT**
(Independent switching button for the video signal)
This button is used to switch the video signals independently of the audio signals.
Holding this button down will cause the video input signals to be switched in the order shown below. When the desired video input signal is displayed on the (FLD) multi-function display, remove your finger from the button. Now, even if the AUDIO FUNCTION selector 5 is switched, the video signal will not change.
To cancel this condition, press the VIDEO SELECT button again or press the VIDEO FUNCTION selector 4.
→ DBS/BS → VDP → VCR-1 → VCR-2 → V. AUX
- 4 **VIDEO FUNCTION Selector**
(Video input signal switching button)
This button is used for the input positions which have video input signals.
Pressing this button repeatedly or holding it down steadily will switch the input positions in the following sequence.
→ DBS/BS → VDP → VCR-1 → VCR-2 → V. AUX
- 5 **AUDIO FUNCTION Selector**
(Audio input signal switching button)
This button is used for switching the audio input positions.
Pressing this button repeatedly or holding it down steadily will switch the input positions in the following sequence.
→ PHONO → CD → TUNER → DAY/TAPE-1 → DAY/TAPE-2
- 6 **TUNING (Tuning Buttons)**
Press these buttons to tune in a station. In the MANUAL TUNING mode, each press of the buttons will change the frequency in 100 kHz (or 50 kHz, Asia Model only) steps on FM and 10 kHz (or 9 kHz, Asia Model only) steps on AM. Keeping one of these buttons pressed, the frequency will change until the button is released.
During the AUTO TUNING mode, pressing one of these buttons will affect station search up or down the band.
- 7 **MASTER VOLUME control**
Turn the knob clockwise (↻) to raise the volume and turn it counterclockwise (↺) to lower it.
- 8 **PHONES jack**
This jack is used for headphone connections.
NOTE:
When using headphones only, switch off the speakers with OUTPUT button on the remote control unit. See page 16.
- 9 **PANEL button**
Pressing this button provides a display of the current operating condition on the Display.
Pressing this button will switch the Display. For details, see Page 11 to 12.

- 10 REC SELECT**
(Independent switching buttons for audio and video recording outputs)
These buttons provide a selection of the audio recording and video recording modes which is independent of the selection of the FUNCTION SELECTOR.
- AUDIO button:**
This button selects a signal output to the recording output jacks of DAT/TAPE 1 and 2, as well as VCR-1 and 2.
With regard to the recording output, the signal input normally selected by the FUNCTION SELECTOR is output to the recording output side. Use of this button, however, permits selection of a signal from input jacks other than the FUNCTION SELECTOR jacks.
 - VIDEO button:**
This button selects the signal output to the video (and audio) recording output jacks of VCR-1 and 2.
With regard to the video recording (audio recording) output, normally the video signal (audio signal) selected by the VIDEO FUNCTION selector button 4 is output. Use of this button, however, permits selection of an input signal from input jacks other than the VIDEO FUNCTION SELECTOR jacks.
- 11 SURROUND buttons**
Pressing this button selects the surround mode.
- BYPASS button**
Pressing this button will bypass the surround mode to provide regular stereo playback.
Rear output will not be provided.
 - MODE button**
Pressing this button switches the surround mode in the following order:
Priority order
- ```

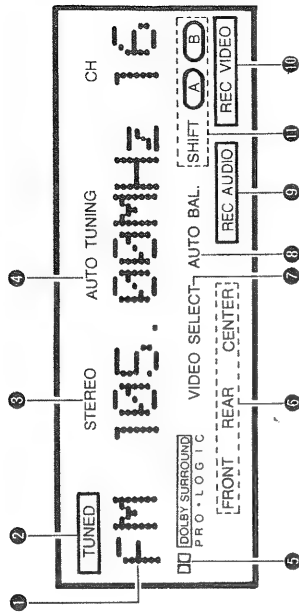
graph TD
 1[DOLBY PRO-LOGIC] --> 2[SPECTAREA]
 2 --> 3[HALL]
 3 --> 4[SIMULATED]
 4 --> 5[STUDIO]

```
- 12 BASS control**  
This control is used to adjust the bass level of the front speaker output or the PRE OUT FRONT jacks.  
The bass is increased when the control is turned clockwise ( ) and decreased when turned counterclockwise ( ) from the center position.
- 13 TREBLE control**  
This control is used to adjust the treble level of the front speaker output or the PRE OUT FRONT jacks.  
The treble is increased when the control is turned clockwise ( ) and decreased when turned counterclockwise ( ) from the center position.
- 14 BALANCE (Balance Control)**  
Use this control to balance the volume levels between front left and front right channels. The volume levels in both channels are equal when the control is set to the center position.
- 15 TUNING BAND (Tuning Band Selector Switch)**  
Press this switch to select FM or AM band.
- 16 TUNING MODE (Tuning Mode Switch)**  
This switch allows selection between Auto Tuning and Manual Tuning.  
AUTO TUNING: Pressing the UP button, the tuner will begin tuning to a higher frequency and pressing the DOWN button, it will begin tuning to a lower frequency until a broadcasting station is found.  
MANUAL TUNING: Stations are tuned in manually by use of the UP and DOWN buttons. FM output is manual during MANUAL TUNING.
- 17 PRESET CHANNEL 1 ~ 16 (Preset Station Buttons)**  
These buttons are used for storing stations or recalling stations which have been preset. Using the SHIFT button you can preset a total of 16 FM or AM stations into preset channels 1 ~ 8 and 9 ~ 16.  
Once a radio has been memorized on a PRESET CHANNEL button, the same station can later be tuned in instantly simply by pressing the corresponding PRESET CHANNEL button.
- 18 SHIFT (Shift Button)**  
Each time this button is pressed, the preset station range will be shifted between "1 ~ 8" and "9 ~ 16": (A: 1 ~ 8, B: 9 ~ 16)
- 19 MEMORY (Memory Button)**  
This switch is used to store the desired radio station on a PRESET CHANNEL button. When pressing this button, the CH indicator flashing for approximately 6 seconds. During this interval, the desired station can be stored in the memory.
- 20 VIDEO AUX INPUTS (external video input jacks)**  
Connect the component's S-video jack to the receiver's S-VIDEO jack with an connection cord designed for S-jacks.  
Connect the component's video output jack to the VIDEO jack with a 75-ohm coaxial cable pin-plug cord.  
Connect the component's audio output jacks to the AUDIO jacks with pin-plug cords.
- 21 MASTER VOLUME LED**
- 22 MULTI FUNCTION DISPLAY**  
The display indicates the tuner's reception frequency, the surround mode, the input and output data, etc., in up to 16 characters.  
Normally the reception frequency is displayed when the function is set to tuner, and the surround mode is displayed when the function is set to other positions.  
The display also indicates various other information as necessary.  
Refer to page 12 for details.
- 23 FM ANT. (FM Antenna Terminals)**  
Both 75-ohm coaxial cable and 300-ohm feeder can be connected to this terminal. For antenna connecting procedure, see the ANTENNA INSTALLATION.
- 24 AM ANT. (AM Antenna Terminals)**  
Connect the attached AM loop antenna. (Refer to page 8 for connections).  
Connect to this terminal when a medium wave outdoor antenna is used.
- 25 VIDEO input/output jacks**
- 26 S-VIDEO input/output jacks**
- 27 TAPE/REMOTE CONTROL**  
This terminal is exclusively used for sending the remote control signals to the tape deck. Connect it with a 3.5mm mini-jack cord.
- NOTE:**  
Do not hook up a headphones or microphone jack cord. Use this jack to connect a DENON cassette deck with a remote control jack (wired).  
If the cassette deck does not have this jack, wired remote control is not possible.



# Display

- 20 AC OUTLET (AC Power Outlets)  
This AC outlet is controlled by the power switch. Maximum capacity is 120 W.
- 21 AC CORD (Power Cord)  
Connect this cord into the wall outlet.
- 22 AM LOOP ANT (AM Loop Antenna)  
Correctly connect the AM loop antenna to the antenna terminal. Broadcasting cannot be received when the connection is incomplete. Adjust the antenna for optimum reception while receiving AM. Do not place a pin cord, SP cord or electric cord near the antenna. This may cause noise generation.
- 23 GND (ground connection terminal)  
Connect the turntable's ground wire here.
- 24 INPUTS (audio input jacks)
- 25 OUTPUTS (audio output jacks)
- 26 PRE OUT (FRONT, CENTER, REAR jacks)
- 27 MONO OUT (monaural output jacks)  
Connect a separately sold subwoofer, etc.
- 28 SPEAKERS (speaker terminals)  
NOTE: For connections, see page 5.
- 29 FREQUENCY STEP (Frequency Step) Switch  
Multi Voltage model only.
- 30 LINE VOLTAGE (Line Voltage) Switch  
Multi Voltage model only.



- 1 MULTI FUNCTION DISPLAY  
Normally a maximum of 16 characters. When the function is set to tuner, and the surround mode is displayed when the function is set to other positions. The display also indicates various other information according to the buttons pressed, as shown in the examples on the following pages 12.
- 2 TUNED (Tuned Indicator)  
This indicator lights when broadcast signals are received.
- 3 STEREO (Stereo Indicator)  
The STEREO indicator will automatically light up when a stereo broadcast is received.
- 4 AUTO TUNING (AUTO TUNING Indicator)  
This indicator lights when the auto tuning mode is selected by pressing the TUNING MODE button 6.
- 5 DOLBY SURROUND Indicator  
This indicator lights when DOLBY PRO LOGIC is selected by pressing the SURROUND MODE button 11.
- 6 OUTPUT CHANNEL Indicator  
This indicates the currently output speaker channel.
- 7 VIDEO SELECT (VIDEO INPUT SELECT Indicator)  
This indicator lights when the video monitor output is fixed in the video input select mode.
- 8 AUTO BALANCE Indicator  
This indicator shows that the auto input balance operation is active. It lights up when the surround mode is Dolby Pro-logic or Spectarea.
- 9 REC AUDIO (REC SELECT AUDIO Indicator)  
This indicator lights when the recording audio output is fixed in the REC SELECT AUDIO mode.
- 10 REC VIDEO (REC SELECT VIDEO Indicator)  
This indicator lights when the recording video output is fixed in the REC SELECT VIDEO mode.
- 11 SHIFT (Shift Indicator)  
The preset channel which is selected with the Shift Button 8 is displayed by the SHIFT 11 or 9.

## ANTENNA INSTALLATION

- FM ANTENNA  
The supplied T-type indoor FM antenna (300 ohms) can be used inside wooden houses for receiving local FM stations and other strong FM signals. Stretch out the ends of the antenna and mount the antenna on the wall or ceiling where optimum reception is achieved. FM T-type antennas may not consistently ensure stable reception, due to environment changes. In such cases, the FM T-type antenna should only be used temporarily until an outdoor FM antenna has been installed.  
When connecting an outdoor FM antenna, the use of 75 ohm coaxial cable (3C-2V, 5C-2V) is strongly recommended. Using a 300-ohm feeder cable will cause noise and you will not be able to achieve the high sound quality the built-in tuner is capable of delivering.
- AM ANTENNA  
Attach the supplied AM loop antenna to the antenna holder on the back panel.  
Connect the leads to the AM and GND terminals.

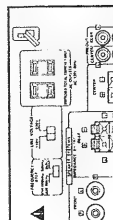
Also use the AM terminals for connecting an outdoor AM antenna (When making such a connection do not disconnect the AM loop antenna.)  
Adjust the loop antenna to obtain optimum reception. Where broadcast stations are distant and only weak signals are received, or where signals are blocked, it is best to install an outdoor AM antenna.

### NOTES

- This receiver has a full back-up system. When the power is turned on, the INPUT SELECTOR buttons are set to the last mode set before the power was turned off.
- When using this receiver in close proximity to video equipment (TV, VCR, VDP, etc.), noise may be generated in AM broadcasts. To avoid this, keep the receiver as far away from other video components as possible, or detach the AM loop antenna from the antenna holder and place it where noise is reduced. If the noise is not reduced, turn off the power of the video components when listening to AM broadcasts.

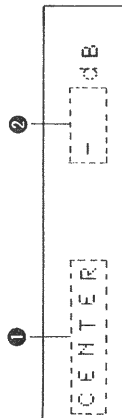
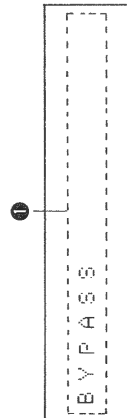
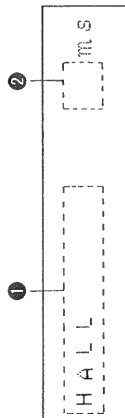
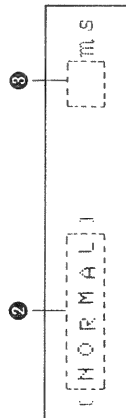
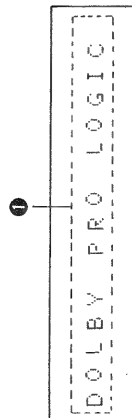
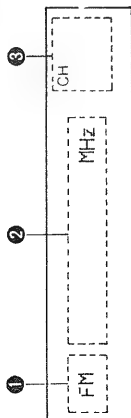
## MULTI VOLTAGE MODEL ONLY

- Setting the frequency step.  
Set the FREQUENCY STEP switch as described below.
  - In the U.S.A. and Canada – set the switch to 100 kHz/10 kHz side.
  - With this setting, the frequency varies in 100 kHz steps in the range of 87.5 to 108.0 MHz(FM) and in 10 kHz steps in 520 to 1710 kHz (AM).
  - Elsewhere – set the switch to 50 kHz/ 9kHz side.
  - With this setting, the frequency varies in 50 kHz steps in the range of 87.50 to 108.00 MHz (FM) and in 9 kHz steps in 522 to 1611 kHz (AM).
- Setting the line voltage (Power Supply: AC 110/220 V, 50/60 Hz)
  - The customer can set the VOLTAGE SELECTOR KNOB on the back panel for appropriate line voltage by using a screwdriver.
  - Do not use excessive force in setting the VOLTAGE SELECTOR KNOB – you may damage it.
  - If the VOLTAGE SELECTOR KNOB does not turn smoothly, call qualified service personnel.
  - Be sure to set both voltage selectors to same position.



# • MULTI FUNCTION DISPLAY Display Pattern Examples

The set modes appear one after another each time the panel button on the AVR-810/810G or the remote control unit is pressed.

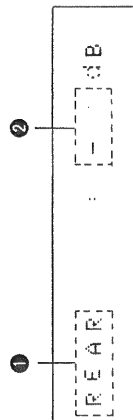


**NOTE:**  
This is not displayed in modes not using the center speakers.

## 4. REAR LEVEL display

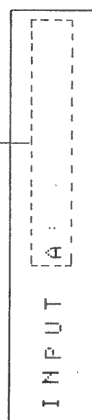
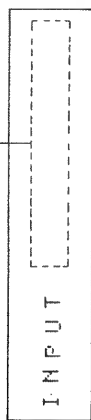
- 1 The display will be shown when the REAR LEVEL button is pressed (Remote Control Unit Only).
- 2 The display is in 2 dB steps from -48 dB (minimum) to 0 dB (maximum).

**NOTE:**  
This is not displayed in modes not using the rear speakers.



## 5. INPUT display

- 1 The display will be shown when one of the input selectors is pressed, after which the function name will appear.
- 2 If a video signal has already been selected using the video select buttons, the audio and video inputs will be displayed for 3 seconds after the button is pressed.



## 6. REC OUT display

- 1 REC SELECT
- 2 The display will be shown when AUDIO or VIDEO is pressed.

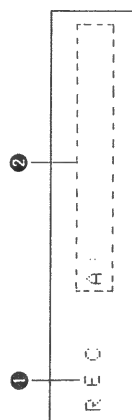
The display shows which audio component was selected: PHONO, CD, TUNER, DAT/TAPE-1, DAT/TAPE-2, DBS/BS, VDP, VCR-1, VCR-2, or V-AUX.

Normally the source is displayed.

Video outputs

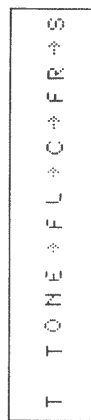
The display shows which video component was selected: DBS/BS, VDP, VCR-1, VCR-2, or V-AUX.

Normally the source is displayed.



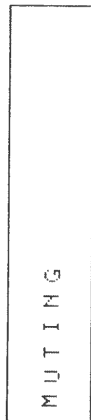
## 7. TEST TONE display

- 1 This appears when the TEST TONE button on the remote control unit is pressed. The arrow moves according to the output. The display remains on until the test tone is turned off.



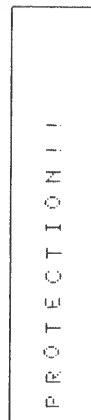
## 8. MUTING display

- 1 This appears when the MUTING button on the included remote control unit is switched on. The display remains on until muting is canceled.



## 9. PROTECTION display

- 1 This appears when the protection circuit is activated. If this display should appear, set the power switch to standby and check the speaker connections, then switch the power back on.



## 7 OPERATION

### PREPARATIONS FOR PLAYBACK

#### 1. Checking connections

- Referring to the connection diagrams (Page 5 to 7) check to make sure that the connections are made properly.
- Check that the left and right speakers are connected properly and also that the polarities (+, -) are correct.
- Check that the left and right sides of the pin-plug cords are connected properly.
- Check that each cord is securely connected.
- Check that each cord is of the proper type.

#### 2. Checking the positions of the controls

- (See Pages 9 to 11 for a reference to the circled numbers.)
- Turn the MASTER VOLUME control ⑦ fully counterclockwise to the "0" position.
  - Set the BALANCE ⑩, BASS ⑪, and TREBLE ⑫ controls to their center positions.

After making the above checks, press the POWER switch ① to switch on the power.  
The receiver will be operable when the LED of the MASTER VOLUME control ③ stops flashing after several seconds of muting.

#### Note on Playback

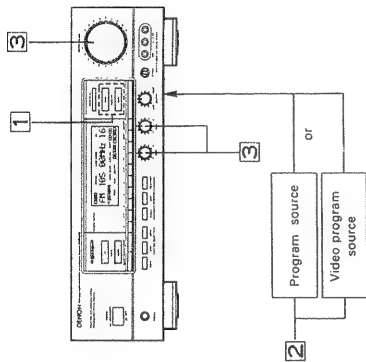
The sound will be interrupted if one of the input selector buttons (④ and ⑤) is pressed during playback. This is due to the operation of the muting circuit which prevents noise from being amplified at the time of switching, and is not a malfunction.  
Note that the activation of the muting circuit mentioned above will not have an effect on the sound being recorded.

- When using the accompanying remote control unit, press the corresponding button.  
For details, see section ⑧, [REMOTE CONTROL UNIT], on page 15.

#### Protection Circuit

This receiver is provided with a high-speed protection circuit. This circuit protects the internal circuitry from large currents which may be created by the output signals when the speaker terminals are not completely connected or are short-circuited.  
The operation of this protection circuit automatically cuts off the output to the speakers and displays "PROTECTION!" on the multi function display.  
If this should happen be sure to set the POWER switch on the receiver to the OFF mode, check the speaker connections, then switch the power back on. After several seconds of muting, the set will operate normally.

- Playback of program sources – 1  
(When the video and audio are from the same source)

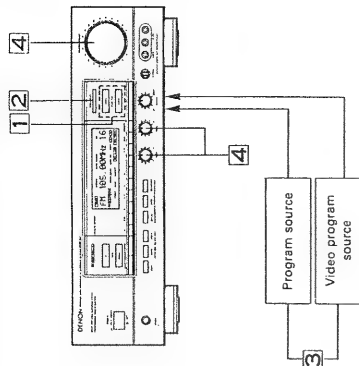


- Select the desired program source by pressing an audio input selection button or a video input selection button.

| Program source                                                                                                                   | AUDIO INPUT SELECTOR |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------|
| To listen to a record                                                                                                            | PHONO                |
| To listen to a CD                                                                                                                | CD                   |
| To listen to FM or AM broadcasts                                                                                                 | TUNER                |
| To listen to the DAT or tape deck connected to the DAT/TAPE-1 jacks                                                              | DAT/TAPE-1           |
| To listen to the DAT or tape deck connected to the DAT/TAPE-2 jacks                                                              | DAT/TAPE-2           |
| Video program source                                                                                                             | VIDEO INPUT SELECTOR |
| To watch a satellite broadcast                                                                                                   | DBS/BS               |
| To watch the video disc player connected to the VDP jacks                                                                        | VDP                  |
| To watch the video deck connected to the VCR-1 jacks                                                                             | VCR-1                |
| To watch the video deck connected to the VCR-2 jacks                                                                             | VCR-2                |
| To watch the video camcorder equipped with playback function or another component connected to the VIDEO-AUX jacks (front panel) | V-AUX                |

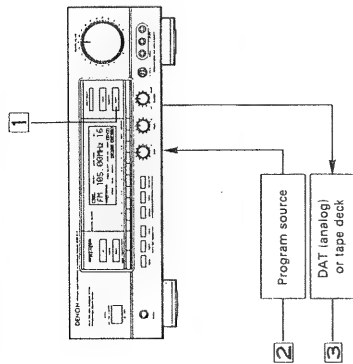
- Begin playback of the program source.  
For operating details, see the manual of the respective component.  
For the tuner, use the TUNING buttons ⑥ and PRESET CHANNEL buttons ⑦ to set the desired frequency.
- Adjust the volume and tone.

- Playback of program sources – 2  
(Picture and sound from different sources – "Simulcast" playback)



- Select the program source you wish to listen to with the AUDIO FUNCTION selector or the VIDEO FUNCTION selector.
  - Press VIDEO SELECT to select the video program source you wish to watch.
  - Begin playback of the program sources.  
For operating details, see the manual of the respective component.  
For the tuner, use the TUNING buttons ⑥ and PRESET CHANNEL buttons ⑦ to set the desired frequency.
  - Adjust the volume and tone.
- When the video program source is again selected with the VIDEO FUNCTION button, even during Simulcast playback, the Simulcast playback will be cancelled automatically.

- Recording program sources and copying tapes (Recording the audio source currently being monitored)



- 1 Press one of the audio input selection buttons to select the program source you wish to record.

| Program source                                                        | AUDIO INPUT SELECTOR |
|-----------------------------------------------------------------------|----------------------|
| To record from a CD                                                   | PHONO                |
| To record from FM or AM broadcasts                                    | TUNER                |
| To record from the DAT or tape deck connected to the DAT/TAPE-1 jacks | DAT/TAPE-1           |
| To record from the DAT or tape deck connected to the DAT/TAPE-2 jacks | DAT/TAPE-2           |

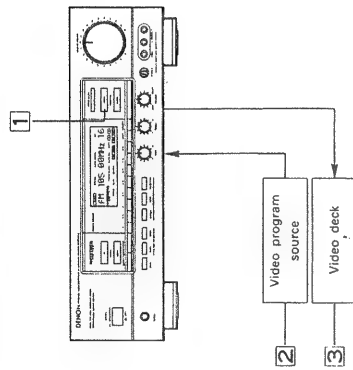
- 2 Begin playback of the program source you wish to record.

- 3 Begin recording on the tape deck or DAT (analog).  
For operating details, see the manual of the respective component.

#### • Simultaneous recording

The signals from the sources selected by the input selection buttons are output simultaneously from the OUTPUT jacks of the audio and video systems. If two tape decks and two Hi-Fi video decks are connected and all four components are set to the recording mode, the four components will record the same source simultaneously.

- Recording video program sources and copying videos (Recording the sound and picture of the video source currently being monitored)



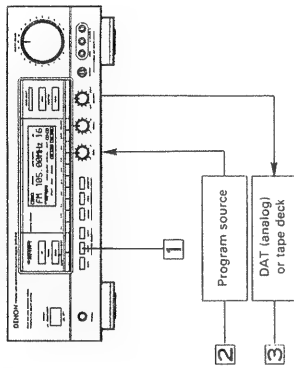
- 1 Press one of the video input selection buttons to select the program source you wish to record.

| Video program source                                                                         | VIDEO INPUT SELECTOR |
|----------------------------------------------------------------------------------------------|----------------------|
| To record from the DBS/BS tuner connected to the DBS/BS jacks                                | DBS/BS               |
| To record from the video disc player connected to the VDP jacks                              | VDP                  |
| To record from the video tape deck connected to the VCR-1 jacks                              | VCR-1                |
| To record from the video tape deck connected to the VCR-2 jacks                              | VCR-2                |
| To record from the video camcorder input connected to the VCR-1 or VCR-2 jacks (front panel) | V-AUX                |

- 2 Begin playback of the video program source you wish to record.

- 3 Begin recording on the video deck.  
For operating details, see the manual of the respective component.

- Independent recording of program sources and independent tape copying (Recording the sound of a source other than the one currently being monitored)



- 1 Hold down the REC SELECT AUDIO button (an independent audio recording output selection button) and when the program source you wish to independently record is displayed, release your finger from the button. The display will be switched in the following sequence.  
PHONO → CD → TUNER → DAT/TAPE-1 → VDP → DBS/BS

- 2 Start playing the program source you wish to record.

- 3 Start the recording with the tape deck or DAT (analog).  
Refer to the instruction manuals accompanying your equipment for details on their operation.

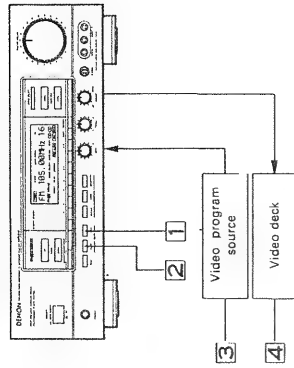
- Pressing the REC SELECT AUDIO button again will cancel this mode.

#### • Monitoring the recording

When making a recording using a 3-head tape deck, the sound that has actually been recorded on the tape can be checked.

To monitor the tape recording, after completing the aforementioned settings, use the AUDIO FUNCTION selector to select the position which connects the 3-head tape deck, either DAT/TAPE-1 or 2.

- Independent recording of video program sources and independent video tape copying - 1 (Recording the picture of a source other than the one currently being monitored)



- 1 Hold down the REC SELECT VIDEO button (an independent video recording output selection button) and when the program source you wish to independently video record is displayed, release your finger from the button. The display will be switched in the following sequence.  
DBS/BS → VDP → VCR-1 → VCR-2 → V-AUX

- 3 Start playing the video program source you wish to video record.

- 4 Start the recording with the video deck.

- Pressing the REC SELECT VIDEO button again will cancel this mode.

- Independent recording of video program sources and independent video tape copying - 2 (Simulcast recording)

Combining the above procedures, the video and audio programs of different sources can be recorded (Simulcast recording).

- 1 Hold down the REC SELECT VIDEO button and release your finger when the video program source you wish to record is displayed.

- 2 Hold down the REC SELECT AUDIO button and release your finger when the program source you wish to record is displayed.

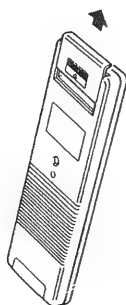
- 3 Begin playback of the program sources.

- 4 Begin recording on the video deck.  
• Pressing the REC SELECT VIDEO button again will cancel this mode.

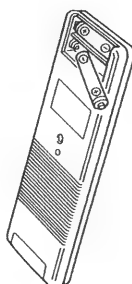
# 8 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

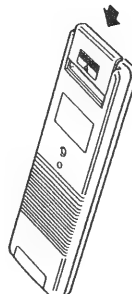
1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P (AA) batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case.



3. Close the bottom cover until it clicks shut.



## Using the remote control unit

The remote control unit uses highly linear infrared rays. Point it at the receiver's remote sensor when operating it. The receiver will not operate if the remote sensor is covered or if there is an obstacle between the remote control unit and the remote sensor. Also note that strong light shining on the remote sensor may result in mistaken operations. In addition, using the receiver near neon signs which generate pulse type noise may result in mistaken operations, so keep the receiver as far as possible from such neon signs.

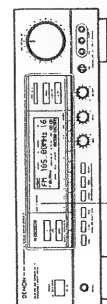
## Cautions for batteries

- Be sure that the ⊕ and ⊖ ends of the batteries match the marks on the battery case of the remote control unit.
- Replace weak batteries as soon as possible.
- Do not mix new batteries with used ones.
- Do not use batteries of different types together. Note that some batteries of the same shape and size may provide different performance.
- Some batteries are rechargeable, others are not. Read the battery instructions carefully.
- Do not connect the ⊕ and ⊖ ends of the batteries directly with metal objects. (Do not short-circuit the batteries.)
- Do not disassemble, heat, or dispose of batteries in a fire. If the batteries should leak, carefully wipe off any fluid from the battery case, then insert new batteries.

## A note on battery replacement

Have replacement batteries on hand so that they can be inserted as quickly as possible after the old batteries are taken out. The codes that have been learned may be lost if new batteries are not inserted within about 5 minutes.

## Range of operation of the remote control unit

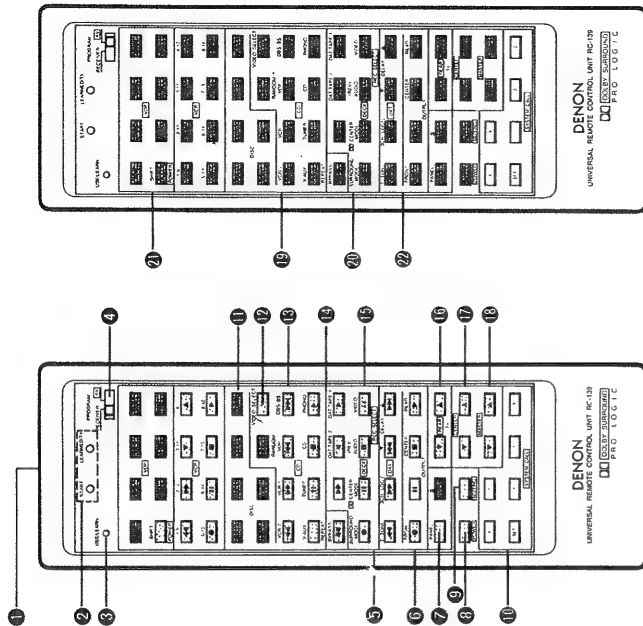


If the range of the remote control seems short or the sensitivity poor, the batteries may be weak. Replace the batteries with new ones promptly.

Range of remote control:  
Approximately 7 m

## Part Names and Functions of the Remote Control Unit

### Learning Function Button



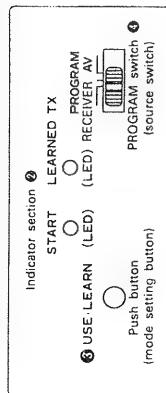
[PROGRAM RECEIVER]  
15 Buttons

[PROGRAM AV]  
58 Buttons

1. **Transmitting window** The remote control signals (infrared rays) are sent from this window.

Buttons contain a special receiver code and cannot learn.  
Buttons can learn. In the initial condition they contain the codes of DENON CD, VDP, cassette deck, and DAT products.  
Note that there are a maximum of 37 programs when DENON codes have been used.

Follow the procedure described below to use the learning function of the remote control unit.



Operation

1. USE/LEARN select button ③  
Press this button with the tip of a pen, etc. to set the learn mode.  
The START and LEARNED/TX LEDs in the indicator section ② will start flashing to indicate that learning is possible.
2. Set the PROGRAM switch ④ to the desired side, PROGRAM RECEIVER or AV.
3. Hold the transmitting windows of both your remote control unit and the RC-139 facing each other about 5 cm apart.
4. Press the button of the RC-139 to which you wish to store the code for 1 to 2 seconds, then release it. The LEDs will stop flashing and the START LED will remain lit.
5. Check that the START LED ② is lit, then hold down the corresponding button on the other remote control unit.
6. Release the button when the START LED ② goes off and the LEARNED LED lights up. The code has now been stored. The two LEDs will once again start flashing.  
Use this procedure to store other codes at other buttons.

NOTE:

- If the code cannot be stored, the LEARNED LED will not light after the START LED has gone off. This may occur for a very limited number of models.
- If the memory is overloaded, both LEDs will start flashing rapidly after the START LED lights up. If this happens, no more codes can be stored.  
Use the reset operation to re-learn codes.

8. After the learning operations are completed, press the USE/LEARN switch again. The two LEDs will stop flashing and the unit will be in the transmit mode. Check that the stored codes function properly.  
The buttons for which learning is possible are:  
Up to a maximum of 37 buttons, among the 15 buttons with the PROGRAM switch ④ set to RECEIVER and the 58 buttons with the PROGRAM switch set to AV.

NOTE:  
Depending on the type and length of the codes to be learned, it may not be possible to use all 37 buttons for learning.

Clearing operation

For individual sources

1. Press the USE/LEARN switch ③ with the tip of a pen, etc., to set the learn mode.
2. Set PROGRAM switch ④ to the side of the source you wish to clear (either RECEIVER or AV).
3. Hold down the [VCR-2] and [DSE/BS] buttons at the same time for at least 4 seconds.
4. The START and LEARNED LEDs will light for 2 seconds, then go off when all learned codes for that source are cleared.  
If the source is PROGRAM RECEIVER or AV, the remote control unit will be set to the initial codes (DENON system codes).

For all sources

1. Press the USE/LEARN switch ③ with the tip of a pen, etc., to set the learn mode.
2. The PROGRAM switch ④ may be set to either RECEIVER or AV.
3. Press the [TONE] and the [DELAY] button ⑤ at the same time for at least 4 seconds.
4. When the START and LEARNED LEDs alternately light up 6 times, all learning codes will have been cleared.  
Note that the initial codes (DENON system codes) will be set.

Remote control operation

1. Check that both LEDs are off.  
If both LEDs are flashing or if the START LED is lit, press the USE/LEARN button to switch them off.
2. When a remote control operation button is pressed, the LEARNED/TX LED will light and the remote control code will be transmitted.

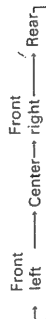
Description of AVR-810/810G code buttons

- For buttons also on the AVR-810/810G, refer to pages 14 to 18.

⑤ SURROUND buttons  
(Same function as on receiver)

- BYPASS button
- SURROUND MODE button
- CENTER MODE button
- TEST TONE button

This button produces a test signal for adjusting the level of each channel in the Dolby Pro Logic surround mode.  
The test tone is switched as follows:



⑥ OUTPUT buttons

These buttons switch the speaker outputs on and off.  
The settings are displayed on the display ⑩.

- FRONT Operates the speaker systems connected to the front speaker output terminals.
- CENTER: Operates the speaker systems connected to the center speaker output terminals.
- REAR: Operates the speaker systems connected to the rear speaker output terminals.

⑦ PANEL button  
(Same function as on receiver)

⑧ POWER button

CAUTION:

- If the power is turned off with the remote control unit, the receiver is switched to the power stand-by state. If you are to be absent for a long period of time, be sure to turn the power off using the POWER switch on the receiver.
- The LED indicator in the VOLUME control knob lights while the receiver is in the power stand-by state.

⑨ MUTING button

Pressing this button cuts off the outputs from the PRE OUT jacks and the speakers.  
The MASTER VOLUME LED will be flashing during the muting condition. Pressing this button once will set the muting, another press will cancel the muting, the next press sets the muting, and so on.

⑩ SYSTEM CALL buttons

See Page 31.

⑪ TUNER PRESET CALL buttons

(Same function as on receiver)  
• PRESET CHANNEL 1-16  
• SHIFT Button

⑫ VIDEO SELECT buttons

(Same function as on receiver.)

⑬ Video input selection buttons

(Same function as on receiver.)

This signal is used for adjusting the volume balance.  
For details, see Page 12.

• 3-CH LOGIC button

This button is used for playing back a video source recorded using Dolby Surround without using the rear speakers.  
Switching this button on combines the rear speaker audio with that of the front speakers.

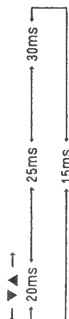
Pressing the button once more switches this function off and returns the set to normal operation.

• DELAY TIME button

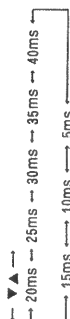
This button sets the delay time.  
This button is only effective when the surround mode is on.

Pressing the ▲ side increases the delay time.  
Pressing the ▼ side decreases the delay time.

The following sequence is provided in the Dolby Pro Logic mode:



The following sequence is provided in other surround modes (not including STUDIO):



7. Repeat steps 4 through 6 above to store codes at other buttons.



#### 14 Audio input selection buttons (Same function as on receiver.)

#### 15 REC SELECT buttons (Same function as on receiver.)

**16 REAR LEVEL button**  
These buttons are used to adjust the level of the rear output.  
Pressing the ▲ side button increases the rear level volume.  
Pressing the ▼ side button decreases the rear level volume.

**17 CENTER level control**  
These buttons are used to adjust the level of the center output.  
Pressing the ▲ side button increases the center level volume. Pressing the ▼ side button decreases the center level volume.

**18 MASTER volume control**  
These buttons are used to adjust the master volume level.  
The ▲ side button turns the master volume control of the receiver clockwise, increasing the overall volume level.  
Pressing the ▼ side button turns the master volume control of the receiver counterclockwise, decreasing the overall volume level.

#### DENON System Code Buttons

When the PROGRAM switch ④ is set to AV, the DENON component system code buttons are set to buttons 19 and 20.

#### 19 CD player system buttons

These buttons directly control the DENON DCD-3560, 970, and other remote-controlled CD players.

The buttons have the same functions as the buttons on the CD player.

► **PLAY button**  
Press this button to begin playback.

■ **STOP button**  
Press this button to stop playback.

II **PAUSE button**  
Press this button to pause.

◀◀ (Manual search reverse button)  
▶▶ (Manual search forward button)  
Press these buttons for manual search in the forward or reverse directions.

◀◀ (Auto search reverse button)  
▶▶ (Auto search forward button)  
Press these buttons for auto search in the forward or reverse directions. Use them to find the beginnings of tracks.

**REPEAT button**  
Press this button when you want to play the disc repeatedly.

**DISC NUMBER buttons (1 ~ 6)**  
These buttons can be used with CD changers equipped with a disc number button.  
For details, refer to the CD changer's manual.

**RANDOM button**  
Press this button to random playback.  
For details, refer to the CD player manual.

#### 20

#### DECK system buttons

These buttons directly control DENON cassette decks equipped for remote control.

The buttons have the same functions as the buttons on the cassette deck.

► **PLAY button (forward direction)**  
Press this button to begin playback in the forward direction.

◀ **PLAY button (reverse direction)**  
Press this button to begin playback in the reverse direction.

■ **STOP button**  
Press this button to stop the deck.

II **PAUSE button**  
Refer to the operating instructions of your DENON tape deck.

● **REC button**  
Refer to the operating instructions of your DENON tape deck.

**SELECT-A/B button**  
Use this button for selection of the deck when using a double deck.

◀◀ **REW button**  
Press this button to rewind the tape.

▶▶ **FF button**  
Press this button to fast-forward the tape.

#### 21 VDP system buttons

These buttons directly control the DENON LA-2000, 3000, and other remote-controlled VIDEO DISC players.

The buttons have the same functions as the buttons on the VIDEO DISC player.

► **PLAY button**  
Press this button to begin playback and pause.

■ **STOP button**  
Press this button to stop playback.

◀◀ (Manual search reverse button)  
▶▶ (Manual search forward button)  
Press these buttons for manual search in the forward or reverse directions.

◀◀ (Auto search reverse button)  
▶▶ (Auto search forward button)  
Press these buttons for auto search in the forward or reverse directions. Use them to find the beginnings of tracks.

**POWER**  
Press this button to power ON/OFF.

**DAT system buttons**  
These buttons directly control the DENON DTR-2000, and other remote-controlled DAT.

The buttons have the same functions as the buttons on the DAT.

► **PLAY button**  
Press this button to begin playback.

■ **STOP button**  
Press this button to stop playback.

II **PAUSE button**  
Press this button to pause.

◀◀ (Manual search reverse button)  
▶▶ (Manual search forward button)  
Press these buttons for manual search in the forward or reverse directions.

◀◀ (Auto search reverse button)  
▶▶ (Auto search forward button)  
Press these buttons for auto search in the forward or reverse directions. Use them to find the beginnings of tracks.

● **REC button**  
Use this button when recording.

#### SYSTEM CALL buttons

The SYSTEM CALL ⑩ function permits continuous remote control operation of the operations stored on up to 5 previously learned buttons using one button.

#### SYSTEM CALL registration

1. Press the [SET] button. The START LED of the indicator section will start flashing.
2. Set the PROGRAM switch ④ and then press up to 5 buttons that you would like to set to system call operation in the order that you wish to send them. Each time a button is pressed the LEARNED/TX LED will light. (The maximum number of buttons that can be stored is 5.)
3. Press one button among buttons 1 through 5 to register the operation.
4. The START LED will go out and the buttons will have been registered.
5. Up to three buttons (1 through 5) can be registered. To continue the procedure and register another button, repeat the operations of steps 1 through 5.

#### NOTE:

The contents of the pressed buttons will also be sent during system call registration and so the transmitting window should be covered or some other precaution taken to avoid unwanted operation of the receiver, video deck, cassette deck etc.

#### SYSTEM CALL cancellation

1. Press the [SET] button and the START LED will begin flashing.
2. Press the button you wish to cancel from among buttons 1 through 5.
3. The START LED will go out and the button will be reset.
4. To continue the procedure and reset another button, repeat the operations of steps 1 through 5.

#### Using the SYSTEM CALL function

1. Press once one of the 1 through 5 buttons that have been registered for system call use.
2. The LEARNED/TX LED will light. The remote control codes will be sent in the registered order approximately every about 1.0 seconds.
3. The LEARNED/TX LED will go out and the transmission will be completed.

#### NOTE:

When one of the buttons on the main unit is pressed while a remote control operation is in progress, or when the remote control is operated while a main unit operation is in progress, priority will be given to the button last pressed and the operation of the button first pressed is stopped. To resume the operation of the button first pressed, press that button again.

## 9 TROUBLESHOOTING

If a problem should arise, first check the following:


1. Are the connections correct?
2. Have you operated the receiver according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?

If the receiver is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

| Symptom                                                         | Cause                                                                                                                                                                                                                                                                                                                                  | Measures                                                                                                                                                                                                                                                         | Page                                 |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| LED not lit and sound not produced when power switch set to on. | <ul style="list-style-type: none"> <li>Power cord not plugged in securely.</li> <li>At the time of the POWER ON function from the remote control unit, the POWER BUTTON of the main unit is not set to ON/STANDBY.</li> </ul>                                                                                                          | <ul style="list-style-type: none"> <li>Check the insertion of the power cord plug.</li> <li>Switch ON with the POWER BUTTON of the main unit.</li> </ul>                                                                                                         | 5-7<br>9                             |
| LED lit but sound not produced.                                 | <ul style="list-style-type: none"> <li>Speaker cords not securely connected.</li> <li>Speaker terminals are short-circuited.</li> <li>Improper position of the audio input selection button.</li> <li>Improper position of the video input selection button.</li> <li>Volume control set to minimum.</li> <li>MUTING is on.</li> </ul> | <ul style="list-style-type: none"> <li>Connect securely.</li> <li>Turn the speaker output switch on.</li> <li>Set to a suitable position.</li> <li>Set to a suitable position.</li> <li>Turn volume up to suitable level.</li> <li>Switch off MUTING.</li> </ul> | 5<br>16<br>13,14<br>13,14<br>9<br>16 |
| LED continues flashing.                                         | <ul style="list-style-type: none"> <li>Speaker terminals are short-circuited.</li> </ul>                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Switch power off, connect speakers properly, then switch power back on.</li> </ul>                                                                                                                                        | 5                                    |
| Sound produced only from one channel.                           | <ul style="list-style-type: none"> <li>Improper connection of speaker cords.</li> <li>Improper connection of input/output cords.</li> <li>Left/right balance is off.</li> </ul>                                                                                                                                                        | <ul style="list-style-type: none"> <li>Connect securely.</li> <li>Connect securely.</li> <li>Adjust balance knob properly.</li> </ul>                                                                                                                            | 5<br>5-7<br>10                       |
| Positions of instruments reversed during stereo playback.       | <ul style="list-style-type: none"> <li>Reverse connections of left and right speakers or left and right input/output cords.</li> </ul>                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Check left and right connections.</li> </ul>                                                                                                                                                                              | 5-7                                  |
| Humming noise produced when record is playing.                  | <ul style="list-style-type: none"> <li>Ground wire of turntable not connected properly.</li> <li>Incomplete PHONO jack connection.</li> <li>TV or radio transmission antenna nearby.</li> </ul>                                                                                                                                        | <ul style="list-style-type: none"> <li>Connect securely.</li> <li>Connect securely.</li> <li>Contact your store of purchase.</li> </ul>                                                                                                                          | 5-7<br>6                             |
| Howling noise produced when volume is high.                     | <ul style="list-style-type: none"> <li>Turntable and speaker systems too close together.</li> <li>Floor is unstable and vibrates easily.</li> </ul>                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Separate as much as possible.</li> <li>Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).</li> </ul>                | -<br>-                               |
| Sound is distorted.                                             | <ul style="list-style-type: none"> <li>Stylus force too weak.</li> <li>Dust or dirt on stylus.</li> <li>Cartridge defective.</li> </ul>                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>Apply proper stylus force.</li> <li>Check stylus.</li> <li>Replace cartridge.</li> </ul>                                                                                                                                  | -<br>-<br>-                          |
| Volume is weak.                                                 | <ul style="list-style-type: none"> <li>MC cartridge being used.</li> </ul>                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>Replace with MM cartridge or use a head amplifier or step-up transformer.</li> </ul>                                                                                                                                      | 6                                    |

## 10 LAST FUNCTION MEMORY

- This receiver is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off.
- This function eliminates the need to perform complicated resettings when the power is switched on.
- This receiver is also equipped with a back-up memory. This function provides approximately one month of memory storage with the power switch "OFF".

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| Symptom                                                                                               | Cause                                                                                                                                                                                                                                                                           | Measures                                                                                                                                                                                                                         | Page                          |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Radio program can not be received.                                                                    | <ul style="list-style-type: none"> <li>Antenna connection is wrong.</li> <li>A signal strength is weak.</li> </ul>                                                                                                                                                              | <ul style="list-style-type: none"> <li>Check the connection.</li> <li>Check the antenna installation.</li> </ul>                                                                                                                 | 6<br>10,11                    |
| Noise is reproduced.                                                                                  | <ul style="list-style-type: none"> <li>A signal strength is weak.</li> <li>Ignition noise interferes with reception.</li> <li>Other electrical equipment interferes with reception.</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>Install an outdoor antenna.</li> <li>Keep the antenna away from the speaker.</li> <li>Keep the equipment away from this set, or turn off the power of the other equipment.</li> </ul>     | 10,11<br>10,11<br>11          |
| In automatic tuning, the frequency doesn't stop at the radio station.                                 | <ul style="list-style-type: none"> <li>A signal strength is weak.</li> </ul>                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Use manual tuning</li> </ul>                                                                                                                                                              | 10,11                         |
| In automatic tuning, it stops at the one step lower or higher frequency than the radio station.       | <ul style="list-style-type: none"> <li>Noise or strong signal strength is received.</li> </ul>                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>Use manual tuning for optimum reception.</li> </ul>                                                                                                                                       | 10,11                         |
| Receiver does not operate properly when remote control unit is used. (When LEARNED TX LED is lit)     | <ul style="list-style-type: none"> <li>Batteries dead.</li> <li>Remote control unit too far from receiver.</li> <li>Obstacle between receiver and remote control unit.</li> <li>Learning process to the button improper.</li> <li>Different button is being pressed.</li> </ul> | <ul style="list-style-type: none"> <li>Replace with new batteries.</li> <li>Move closer.</li> <li>Remove obstacle.</li> <li>Set learning again.</li> <li>Press the proper button.</li> </ul>                                     | 16<br>15<br>15<br>16<br>15-17 |
| Receiver does not operate properly when remote control unit is used. (When LEARNED TX LED is not lit) | <ul style="list-style-type: none"> <li>Learning process to the button improper.</li> <li>Learning process has not been applied to the button.</li> <li>Batteries dead.</li> <li>⊕ and ⊖ ends of battery inserted in improper position of PROGRAM switch.</li> </ul>             | <ul style="list-style-type: none"> <li>Set learning again.</li> <li>Apply learning process.</li> <li>Replace with new batteries.</li> <li>Insert batteries properly.</li> <li>Set to desired position (RECEIVER, AV).</li> </ul> | 16<br>16<br>15<br>15<br>16    |
| "PROTECTION" display appears on the multi function display.                                           | <ul style="list-style-type: none"> <li>Improper speaker cord connection.</li> </ul>                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>Connect speaker cord properly.</li> <li>Connect the speaker cords properly then turn the POWER switch back on.</li> </ul>                                                                 | 5,13<br>5,6                   |

# 11 SPECIFICATIONS

## AMPLIFIER SECTION

- Power Amplifier
- Rated Output:

|                                                   |                                                         |
|---------------------------------------------------|---------------------------------------------------------|
| FRONT:<br>(both channels driven at<br>2ch stereo) | 80 W x 2<br>(8 ohms 20 Hz ~ 20 kHz with<br>0.1% T.H.D.) |
| CENTER:<br>(center 1ch driven at<br>Bypass Mode)  | 30 W x 1<br>(8 ohms 1 kHz with<br>0.4% T.H.D.)          |
| REAR:<br>(at Dolby Pro Logic Normal<br>Mode)      | 30 W x 2<br>(8 ohms 1 kHz with<br>2.0% T.H.D.)          |

## Multi voltage models only

- Power Amplifier
- Rated Output:

|                                                   |                                |
|---------------------------------------------------|--------------------------------|
| FRONT:<br>(both channels driven at<br>2ch stereo) | 135 W + 135 W<br>(6 ohms/EIAJ) |
| CENTER:<br>(center 1ch driven at<br>Bypass Mode)  | 40 W<br>(6 ohms/EIAJ)          |
| REAR:<br>(at Dolby Pro Logic Normal<br>Mode)      | 40 W + 40 W<br>(6 ohms/EIAJ)   |

## Preamplifier and Main amplifier

- Input sensitivity / impedance:

## Output load impedance:

## Frequency response:

## RIAA deviation:

## S/N ratio:

## Tone control range:

## Video

- Rated input / impedance:

## Rated output / impedance:

## Video frequency response:

## Surround

## Delay circuit:

## Surround modes:

Spectra  
Hall  
Simulated  
Studio

## TUNER SECTION

[FM] (note:  $\mu\text{V}$  at 75 ohms, 0 dBf =  $1 \times 10^{-15}\text{ W}$ )

## Receiving Range:

Usable Sensitivity:  
50 dB Quietening

Signal to Noise Ratio  
(HF-AI):

|        |                                                             |
|--------|-------------------------------------------------------------|
| MONO   | 87.5 MHz ~ 108 MHz<br>0.9 $\mu\text{V}$ (10.3 dBf)          |
| STEREO | 1.6 $\mu\text{V}$ (15.3 dBf)<br>23 $\mu\text{V}$ (38.5 dBf) |
| MONO   | 80 dB                                                       |
| STEREO | 75 dB                                                       |
| MONO   | 0.1%                                                        |
| STEREO | 0.2%                                                        |

## Total Harmonic Distortion (at 1 kHz):

[AM] Receiving Range:  
Usable Sensitivity:  
Signal to Noise Ratio:

520 kHz ~ 1710 kHz (for U.S.A. and Canada models).  
522 kHz ~ 1611 kHz (for multi-voltage model).  
18  $\mu\text{V}$   
50 dB

## GENERAL

## Power supply:

120 V AC, 60 Hz (for U.S.A. and Canada models).  
110/220 V, 120/220 V AC, 50/60 Hz (for multi-voltage model)

Power consumption:  
Maximum external dimensions:

4.4 A (for U.S.A. and Canada models)

434 (W) x 140 (H) x 421 (D) mm  
(17.3/3.9" x 5.53/6.4" x 16.37/6.4") (AVR-810)

470 (W) x 140 (H) x 421 (D) mm  
(18.1/2" x 5.33/6.4" x 16.37/6.4") (AVR-810G)

12.5 kg (27 lbs 10 oz) (AVR-810)

14 kg (30 lbs 14 oz) (AVR-810G)

## Weight:

- Remote control unit (RC-139)

## System remote control with Learning function

Total buttons: 64

DENON system code CD player: 15 buttons Cassette deck: 8 buttons

DAT: 8 buttons VDP: 8 buttons

AVR-810/810G fixed codes: 41 buttons

System call buttons: 5 (maximum of 5 codes per button)

Programmable remote control

Maximum total: 37 programs

Batteries: R6P/AA (two batteries)

External dimensions: 70 (W) x 215 (H) x 18 (D) mm

(2.3/4" x 8.15/3.2" x .45/6.4")

Weight: 170 g (Approx. 6 oz) including batteries

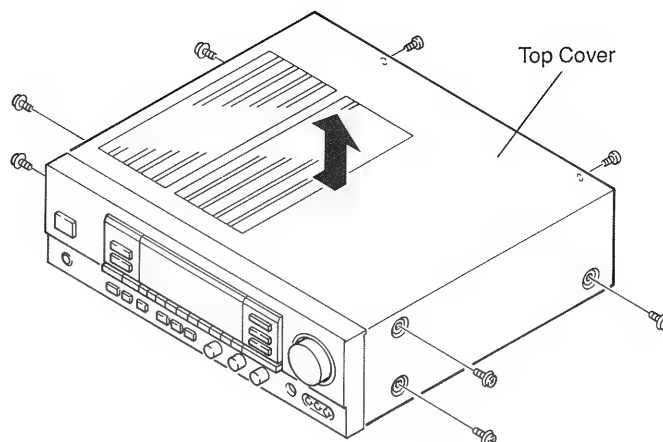
For purposes of improvement, specifications and design are subject to change without notice.

## DISASSEMBLY

(To reassemble reverse disassembly)

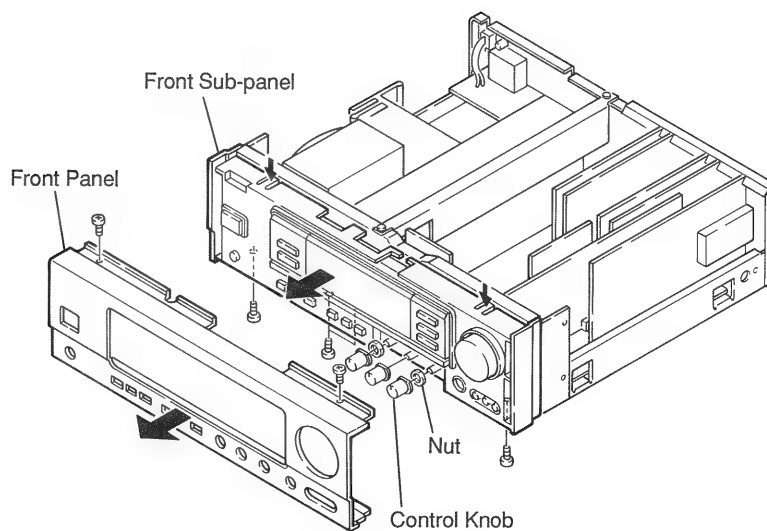
### 1. Top Cover

Remove 8 screws, and pull up the top cover to arrow direction.



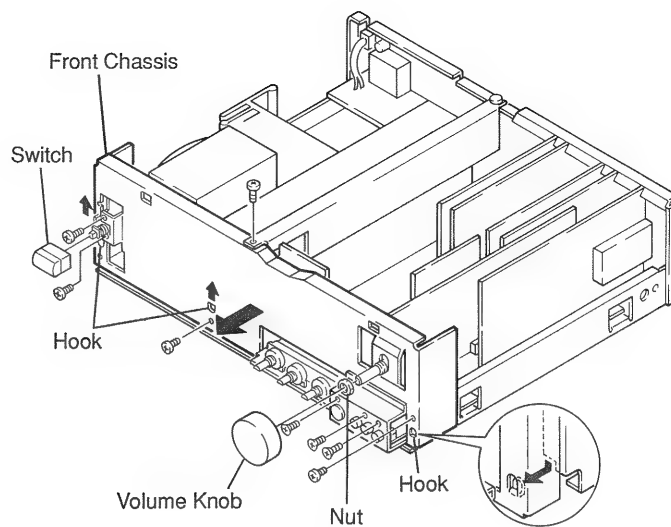
### 2. Front Panel

- (1) Remove 2 upper screws and pull the front panel to arrow direction.
- (2) Remove control knobs and nuts.
- (3) Remove 4 lower screws and pull the front sub-panel to arrow direction.



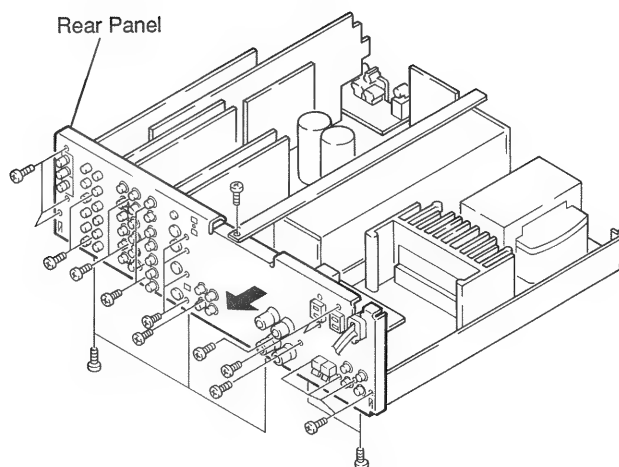
### 3. Front Chassis

- (1) Remove switch, volume knob and nut.
- (2) Remove 1 upper screw and 7 front screws.
- (3) Remove 3 hooks to arrow direction and pull the front panel.



### 4. Rear Panel

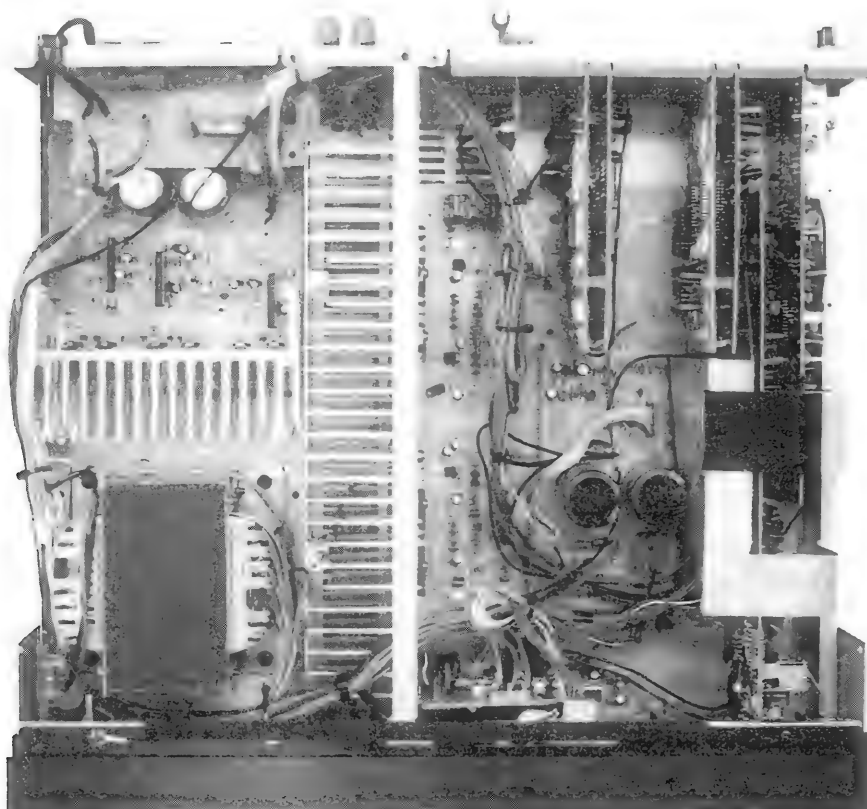
Remove 24 rear screws, 5 bottom screws and 1 upper screw, then pull the rear panel to arrow direction.



## WIRE ARRANGEMENT

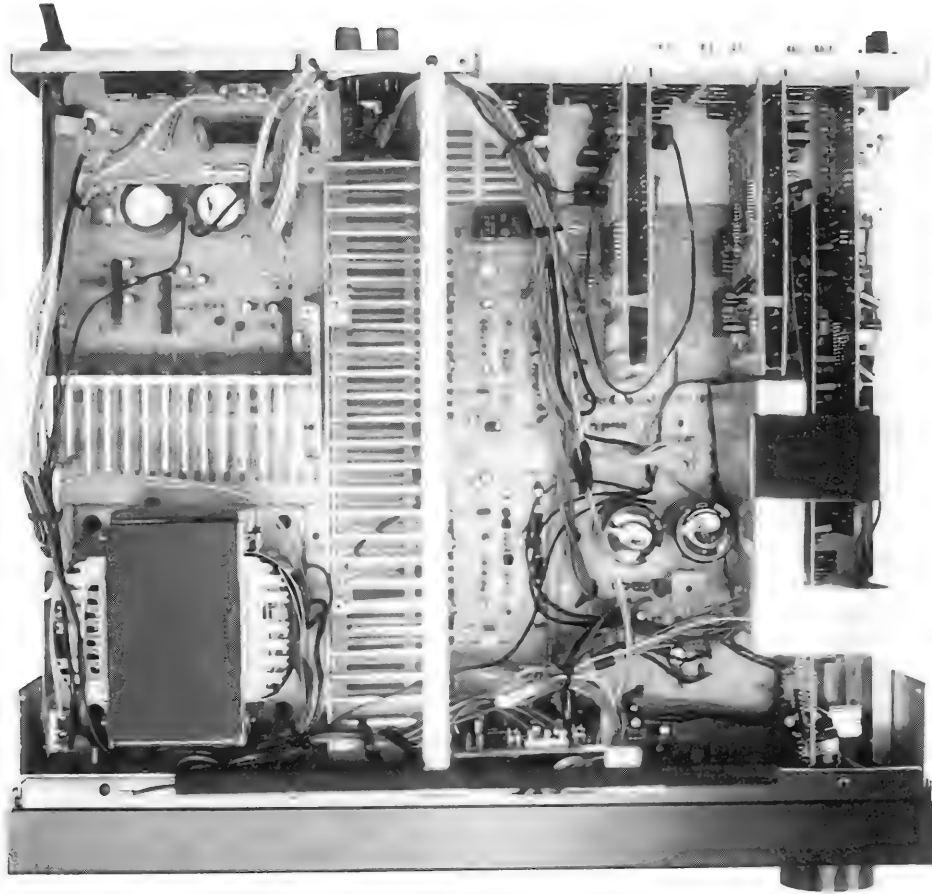
In case wires require unclamping or loosening to move the location to perform adjustment or part replacement, be sure to arrange them neatly to restore properly in the same location as they were originally placed. Or, it may occasionally cause to occur a noise.

For U.S.A. Model





For Multi-Voltage Model

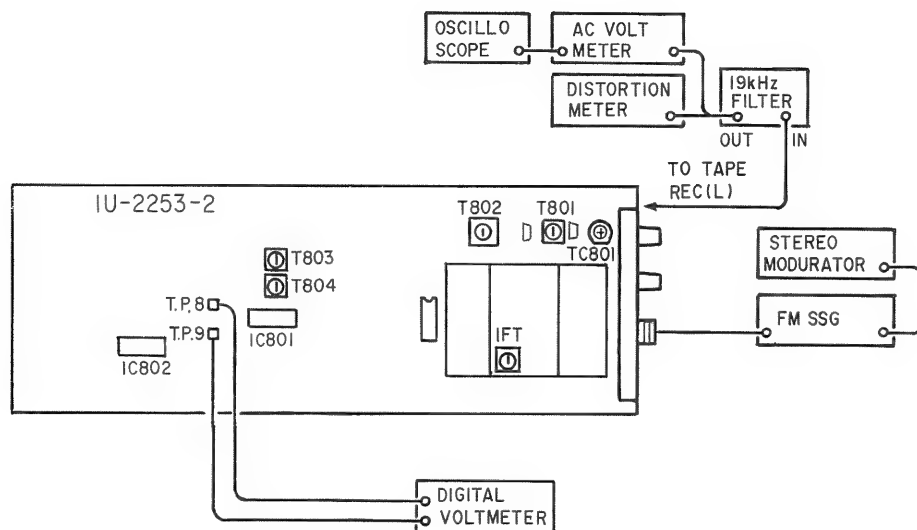


## ADJUSTMENT

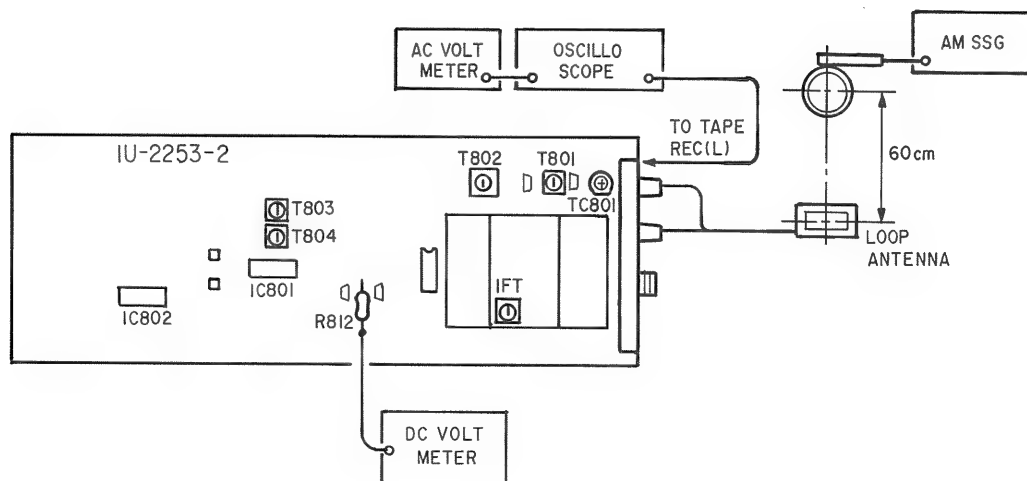
### • TUNER SECTION

#### CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

### • FM



### • AM



## FM/MPX ALIGNMENT

| Step | Alignment Item            | Tuning Frequency Setting | Input             |           |             |                            | Output           |                   |              | Adjust           |                    | Remarks                 |
|------|---------------------------|--------------------------|-------------------|-----------|-------------|----------------------------|------------------|-------------------|--------------|------------------|--------------------|-------------------------|
|      |                           |                          | Type              | Frequency | Input Level | Modulation                 | Coupling         | Type              | Connect to   | Points           | Adjust to          |                         |
| 1    | Tuning Center             | 98 MHz                   | FM SSG Mono       | 98 MHz    | 60 dB $\mu$ | None                       | Antenna Terminal | Digital Voltmeter | T.P.8, 9     | T804             | $\pm 50$ mV        | Function: FM Mode: Auto |
| 2    | Distortion (Mono)         | 98MHz                    | FM SSG Mono       | 98 MHz    | 60 dB $\mu$ | 1 kHz 100%                 | Antenna Terminal | Distortion Meter  | TAPE REC (L) | T803             | Minimum Distortion | Function: FM Mode: Auto |
| 3    | Distortion (Stereo)       | 98 MHz                   | FM SSG Stereo (L) | 98 MHz    | 60 dB $\mu$ | 1 kHz Main: 90% Pilot: 10% | Antenna Terminal | Distortion Meter  | TAPE REC (L) | IFT on Front End | Minimum Distortion | Function: FM Mode: Auto |
| 4    | Noise Center & Distortion |                          |                   |           |             |                            |                  |                   |              |                  |                    |                         |

Repeat 1, 2 and 3 to obtain minimum distortion and same time indicating  $\pm 50$  mV on Digital Voltmeter.

## AM ALIGNMENT

| Step | Alignmet Item                                                       | Tuning Frequency Setting | Input  |           |                                        |            | Output       |                       |              | Adjust |                   | Remarks       |
|------|---------------------------------------------------------------------|--------------------------|--------|-----------|----------------------------------------|------------|--------------|-----------------------|--------------|--------|-------------------|---------------|
|      |                                                                     |                          | Type   | Frequency | Input Level                            | Modulation | Coupling     | Type                  | Connect to   | Points | Adjust to         |               |
| 1    | Receiving Band Alignment                                            | 520 KHz                  | AM SSG | 520 KHz   | Input Level is not over to work A.G.C. | 400 Hz 30% | Loop Antenna | Electric DC Voltmeter | R812 GND     | T802   | 1.0 V $\pm 20$ mV | Function : AM |
| 2    | Tracking Alignment                                                  | 600 KHz                  | AM SSG | 600 KHz   | Input Level is not over to work A.G.C. | 400 Hz 30% | Loop Antenna | Audio V.M.            | TAPE REC (L) | T801   | Maximum Output    | Function: AM  |
|      |                                                                     | 1400 KHz                 | AM SSG | 1400 KHz  | Input Level is not over to work A.G.C. | 400 Hz 30% | Loop Antenna | Audio V.M.            | TAPE REC (L) | TC801  | Maximum Output    | Function: AM  |
| 3    | Repeat 600 KHz and 1400 KHz to obtain maximum reading on Voltmeter. |                          |        |           |                                        |            |              |                       |              |        |                   |               |

## ADJUSTMENT

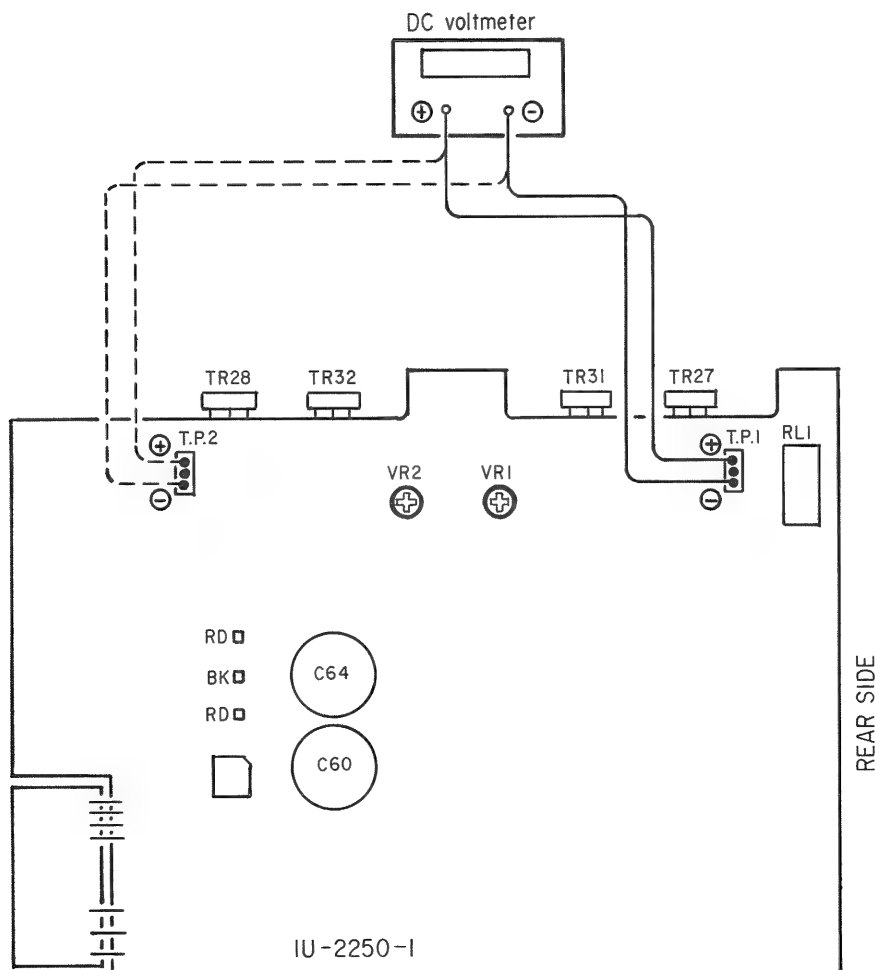
### Idling Current (1U-2250-1) of Front channels

#### Arrangement

- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C. (59°F ~ 86°F).
- (2) Presetting
  - POWER (Power source switch) → OFF
  - VOLUME (Volume control) → 0: fully counterclockwise (↺ min.)
  - TONE, BASS, TREBLE and BALANCE controls to center.
  - SPEAKERS (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

#### Adjustment

- (1) Remove top cover and set VR1 (Lch), VR2 (Rch) of 1U-2250-1, to counterclockwise end position. (↺)
- (2) Connect DC Voltmeter across Lch T.P.1 and Rch T.P.2, which are the test points.
- (3) Connect power cord to AC line, and turn power switch "ON". Allow a minute, and turn VR1 and VR2 clockwise (↻) and adjust the TEST POINT voltage to  $2 \pm 1$  mV DC.
- (4) Allow 2 minutes, and adjust the VR1 and VR2 so that the meter reads  $3 \pm 1$  mV DC.
- (5) Allow 10 minutes, and adjust the VR1 and VR2 so that the meter reads  $3 \pm 1$  mV DC.



## CIRCUIT DESCRIPTIONS

## SURROUND CIRCUIT

(1) Table below shows output in each surround mode.

|                        |         | Output Signal |         |         |                 |             | Delay Time | Output Control |         |      |
|------------------------|---------|---------------|---------|---------|-----------------|-------------|------------|----------------|---------|------|
|                        |         | FRONT         |         |         | REAR            |             |            | FRONT          | CENTER  | REAR |
| MODE                   |         | Lch           | Rch     | CENTER  | Lch             | Rch         |            |                |         |      |
| BYPASS                 |         | Lin           | Rin     | Lin+Rin | —               | —           | —          |                |         | ×    |
| DOLBY<br>PRO.<br>LOGIC | NORMAL  | PRO. FL       | PRO. FR | PRO. C  | PRO. S          |             | 15 ~ 30    |                |         |      |
|                        | PHANTOM | ↓             | ↓       | —       | ↓               |             |            |                | ×       |      |
|                        | WIDE    | ↓             | ↓       | PRO. C  | ↓               |             |            |                |         |      |
|                        | 3CH.    | 3CH. FL       | 3CH. FR | 3CH. C  | —               |             | —          |                | PHAN. × | ×    |
| SPECTAREA              |         | PRO. FL       | PRO. FR | PRO. C  | PRO. S          |             | 5 ~ 40     |                |         |      |
| HALL                   |         | Lin           | Rin     | —       | (Lin+Rin) delay |             | ↓          |                | ×       |      |
| SIMULATED              |         | ↓             | ↓       | —       | (Lin+Rin)d      | -(Lin+Rin)d | ↓          |                | ×       |      |
| STUDIO                 |         | ↓             | ↓       | —       | (Lin-Rin)       | (Lin-Rin)   | 0          |                | ×       |      |

In output control: ( ) d means delay signal. × means OFF output.

Table 1

## Switch control in surround mode

|                        |         | Switching Position in Surround Mode |     |     |     |              |        |          |    | OUTPUT<br>(SPEAKER and VOLUME)<br>Controlling                    |        |      | DELAY<br>TIME                                |
|------------------------|---------|-------------------------------------|-----|-----|-----|--------------|--------|----------|----|------------------------------------------------------------------|--------|------|----------------------------------------------|
|                        |         | LC7821 "H" SW No.                   |     |     |     |              |        |          |    |                                                                  |        |      |                                              |
| SURROUND MODE          |         | 1                                   | 2   | 3   | 4   | 5            | 6      | 7        | 8  | FRONT                                                            | CENTER | REAR | (msec)                                       |
| BYPASS                 |         |                                     |     |     | ○   |              | ○      |          |    |                                                                  |        | ×    | —                                            |
| DOLBY<br>PRO.<br>LOGIC | NORMAL  | ○                                   |     |     |     | ○            |        | ○        |    |                                                                  |        | Δ    | 15 ~ 30                                      |
|                        | PHANTOM | ○                                   |     |     |     | ○            |        | ○        |    |                                                                  | ×      | Δ    | 15 ~ 30                                      |
|                        | WIDE    | ○                                   |     |     |     | ○            |        | ○        |    |                                                                  |        | Δ    | 15 ~ 30                                      |
| SPECTAREA              |         | ○                                   |     |     |     | ○            |        |          | ○  |                                                                  |        |      | 5 ~ 40                                       |
| HALL                   |         |                                     | ○   |     |     |              | ○      | ○        |    |                                                                  | ×      |      | 5 ~ 40                                       |
| SIMULATED              |         |                                     | ○   |     |     |              | ○      |          | ○  |                                                                  | ×      |      | 5 ~ 40                                       |
| STUDIO                 |         |                                     |     | ○   |     |              | ○      | ○        |    |                                                                  | ×      |      | Fixed 0                                      |
|                        |         | PRO. C                              | —   | —   | L+R | PRO. L       | DIRECT |          |    | ×: Inhibits output and controlling.<br>Δ: Inhibits at 3ch Logic. |        |      | ※<br>— denotes<br>Controlling<br>inhibition. |
|                        |         | PRO. R                              | L+R | L-R | —   | PRO. R       | DIRECT | R        | R— |                                                                  |        |      |                                              |
|                        |         | REAR, CENTER SIGNAL                 |     |     |     | FRONT SIGNAL |        | REAR Rch |    |                                                                  |        |      |                                              |
|                        |         | ○ : ON Position, OFF for all others |     |     |     |              |        |          |    |                                                                  |        |      |                                              |

Table 2

(2) Dolby Pro-logic surround circuit

AVR-810/AVR-810G provides **Dolby pro-logic surround circuit** surround decoder which functions same as Dolby surround decoder for professional use. The circuit is also called **active decoder**, and it comprises a different circuit from **passive decoder**, conventionally employed for home use labelled as "Dolby surround." (Figure 4)

**Directional enhancer to produce crisp sound image travel.**

Main feature is **Directional enhancement circuit**. The conventional Dolby surround circuit is designed to control 3 channels (L.R.S), but this circuit provides a new center channel and 4 channels (L.R.C.S.) control, and employs speaker system same as that of a theater to produce the sound effect.

A merit of directional enhancement circuit greatly improves the front and rear sound separation to provide a sharp and dynamic front and rear sound image traveling. Conventionally the front and rear separation is around 3 dB, but the pro-logic provides approximately 26 ~ 40 dB. (Figure 5, 6). The directional enhancement circuit controls left, right, center and surround signals independently, and the sound image is very crisp and clear. With the conventional Dolby surround, the center sound image is nothing but compound of L and R channels, but the pro-logic has an independent center channel to produce the sound image, and achieved approximately 26 ~ 40 dB L and R channels separation. When the sound image is at center, both L and R channel output are cut down and as the sound image travels to L channel, center and R channel output are cut to enhance the travel of the sound.

**Feature of Pro-Logic mode**

- **NORMAL:** Signals which below 100Hz is cut are applied to center channel, and the signals below 100Hz are applied to L and R front speakers. Employ L and R speakers of a certain grade (as a pointer, use ones better than book-shelf), and use a smaller speaker for the center channel.
- **WIDE:** Normal signal is applied to center channel as it is. Employ speakers of the same grade (better than book-shelf) for center channel as well as L and R speakers.
- **PHANTOM:** Center channel signals are evenly applied to L and R channels. When a center speaker is not available, this mode is employed. Even without the center channel, the directional enhancement circuit functions as it is.
- **3CH LOGIC:** "3CH LOGIC" mode built in remote control is to enjoy the surround mode without the surround speaker. In normal pro-logic mode, rear (Sch) outputs reversed phase of Lch, Rch input, but in this mode the output is mixed with the front direction Lch and Rch outputs.
- **TEST TONE (Remote control):** Used to adjust output level of each channel.



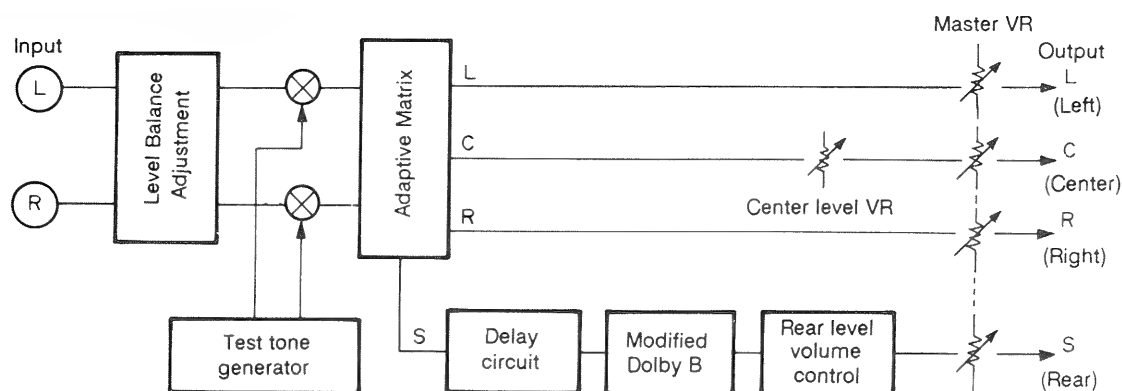


Figure 4

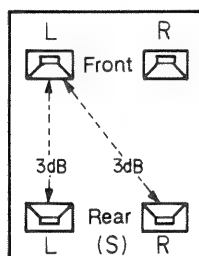


Figure 5

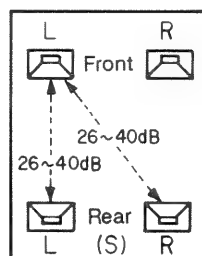
Dolby surround decoder  
(Passive decoder)


Figure 6

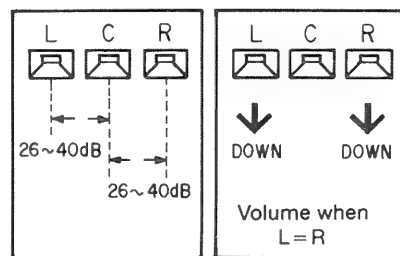
Dolby pro-logic surround decoder  
(Active decoder)


Figure 7

Dolby pro-logic surround decoder  
(Active decoder)

### Confirm Pro-logic circuit function

Confirm correct pro-logic circuit function with input signal shown table below.

- Measurement : Apply the correct input signal, and adjust level VR of master, center and rear, so that the level falls approximately within \* level, respectively.

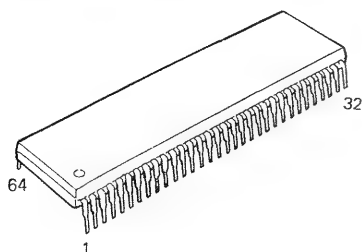
|               | Input                                          | Output | Mode                                                      |             |             |
|---------------|------------------------------------------------|--------|-----------------------------------------------------------|-------------|-------------|
|               |                                                |        | Normal                                                    | Phantom     | Wide        |
| Pro-logic     | L ch only                                      | L      | * 0 dB (1 kHz)                                            | →           | →           |
|               |                                                | C      | (a) Below -20 dB<br>(Normally approximately -26 ~ -42 dB) |             |             |
|               |                                                | R      |                                                           |             |             |
|               |                                                | S      |                                                           |             |             |
|               | R ch only                                      | L      | Same as (a)                                               |             |             |
|               |                                                | C      |                                                           |             |             |
|               |                                                | R      | * 0 dB (1 kHz)                                            | →           | →           |
|               |                                                | S      | Same as (a)                                               |             |             |
|               | L = R<br>Same Phase<br>signal                  | L      | Below -20 dB/approx. -6 dB                                | 0 dB        | Same as (a) |
|               |                                                | C      | * 0 dB/approx. -3 dB                                      | Same as (a) | 0 dB/0 dB   |
|               |                                                | R      | Below -20 dB/approx. -6 dB                                | 0 dB        | Same as (a) |
|               |                                                | S      | Same as (a)                                               |             |             |
| 3 ch<br>logic | L = -R<br>Both CHs<br>Reversed<br>Phase signal | L      | Same as (a)                                               |             |             |
|               |                                                | C      |                                                           |             |             |
|               |                                                | R      | * +3 dB                                                   | →           | →           |
|               |                                                | S      | * -3 dB                                                   | →           | →           |
|               |                                                | L      | * -3 dB                                                   | →           | →           |
|               |                                                | C      | Same as (a)                                               |             |             |
|               | L = -R<br>Both CHs<br>Reversed<br>Phase signal | R      | * -3 dB                                                   | →           | →           |
|               |                                                | S      | Same as (a)                                               |             |             |

Table 3

# SEMICONDUCTORS

## IC's

### MSC7128-03SS (IC903)

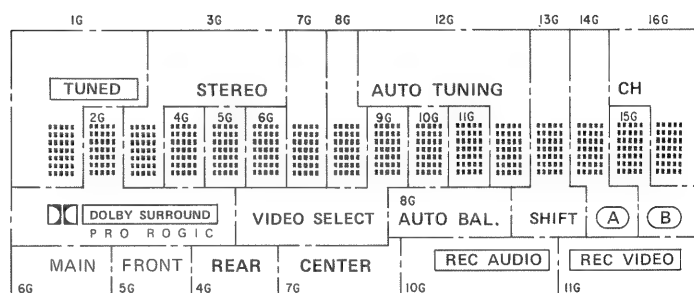
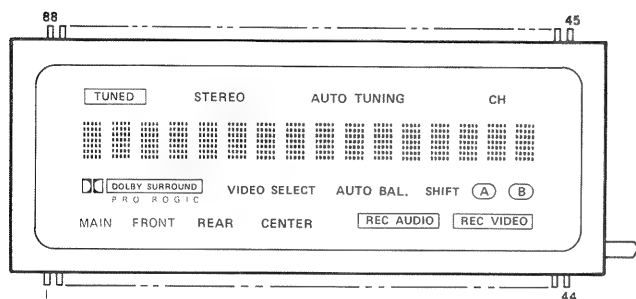


| Terminal Name | Terminal No. | I/O | Connection   |
|---------------|--------------|-----|--------------|
| VDD1          | 60           |     | Power Supply |
| VDD2          | 59           |     |              |
| VSS           | 5            |     |              |
| VEE           | 6            |     |              |
| DA            | 63           | I   | μCOM         |
| CP            | 62           | I   | μCOM         |
| CS            | 64           | I   | μCOM         |
| OSCI          | 2            | I   |              |
| OSCO          | 1            | O   |              |

| Terminal Name | Terminal No. | I/O | Connection       |
|---------------|--------------|-----|------------------|
| RESET         | 61           | I   |                  |
| COM1 ~ COM16  | 7 ~ 22       | O   | FL DISPLAY GRID  |
| SEG1 ~ SEG35  | 58 ~ 24      | O   | FL DISPLAY ANODE |
| SEG36         | 23           | O   | FL DISPLAY ANODE |
| TEST STEP     | 4            | I   |                  |
| TEST COUNT    | 3            | I   |                  |

Table 4

## FL DISPLAY FIP16XM1KA



|    |    |    |    |    |
|----|----|----|----|----|
| 11 | 21 | 31 | 41 | 51 |
| 12 | 22 | 32 | 42 | 52 |
| 13 | 23 | 33 | 43 | 53 |
| 14 | 24 | 34 | 44 | 54 |
| 15 | 25 | 35 | 45 | 55 |
| 16 | 26 | 36 | 46 | 56 |
| 17 | 27 | 37 | 47 | 57 |

5 × 7 Dot inner connections.

(UPPER)

|                           |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| TERMINAL No.<br>ELECTRODE | 88<br>F         | 87<br>F         | 86<br>NP        | 85<br>NP        | 84<br>NP        | 83<br>NP        | 82<br>NP        | 81<br>NP        | 80<br>P<br>(11) | 79<br>P<br>(21) | 78<br>P<br>(31) | 77<br>P<br>(41) |                 |                 |                 |                 |                 |                 |                 |                 |
| TERMINAL No.<br>ELECTRODE | 76<br>P<br>(51) | 75<br>P<br>(12) | 74<br>P<br>(22) | 73<br>P<br>(32) | 72<br>P<br>(42) | 71<br>P<br>(52) | 70<br>P<br>(13) | 69<br>P<br>(23) | 68<br>P<br>(33) | 67<br>NP        | 66<br>NP        | 65<br>NP        | 64<br>P<br>(55) | 63<br>P<br>(45) | 62<br>P<br>(35) | 61<br>P<br>(25) | 60<br>P<br>(15) | 59<br>P<br>(54) | 58<br>P<br>(44) | 57<br>P<br>(34) |
| TERMINAL No.<br>ELECTRODE |                 |                 |                 |                 |                 |                 |                 |                 | 56<br>P<br>(24) | 55<br>P<br>(14) | 54<br>P<br>(53) | 53<br>P<br>(43) | 52<br>NP        | 51<br>NP        | 50<br>NP        | 49<br>NP        | 48<br>NP        | 47<br>NP        | 46<br>F         | 45<br>F         |

(LOWER)

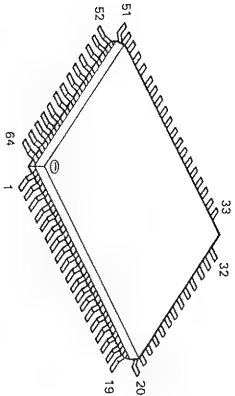
| TERMINAL No.<br>ELECTRODE |    |    |    |     |     |     |     |     | 33   | 34   | 35   | 36   | 37 | 38  | 39   | 40   | 41   | 42   | 43   | 44   |
|---------------------------|----|----|----|-----|-----|-----|-----|-----|------|------|------|------|----|-----|------|------|------|------|------|------|
|                           |    |    |    |     |     |     |     |     | P    | P    | P    | P    | NP | NP  | NP   | NP   | NP   | NP   | F    | F    |
|                           |    |    |    |     |     |     |     |     | (27) | (37) | (47) | (57) |    |     |      |      |      |      |      |      |
| TERMINAL No.<br>ELECTRODE | 13 | 14 | 15 | 16  | 17  | 18  | 19  | 20  | 21   | 22   | 23   | 24   | 25 | 26  | 27   | 28   | 29   | 30   | 31   | 32   |
|                           | 3G | 7G | 8G | 12G | 13G | 14G | 15G | 16G | 11G  | 10G  | 2G   | 9G   | NP | P   | P    | P    | P    | P    | P    | P    |
|                           |    |    |    |     |     |     |     |     |      |      |      |      |    | (X) | (16) | (26) | (36) | (46) | (56) | (17) |
| TERMINAL No.<br>ELECTRODE | 1  | 2  | 3  | 4   | 5   | 6   | 7   | 8   | 9    | 10   | 11   | 12   |    |     |      |      |      |      |      |      |
|                           | F  | F  | NP | NP  | NP  | NP  | NP  | NP  | 6G   | 5G   | 4G   | 1G   |    |     |      |      |      |      |      |      |

Notes: F: Filament NP: No Pin

G: Grid  
P: Anode

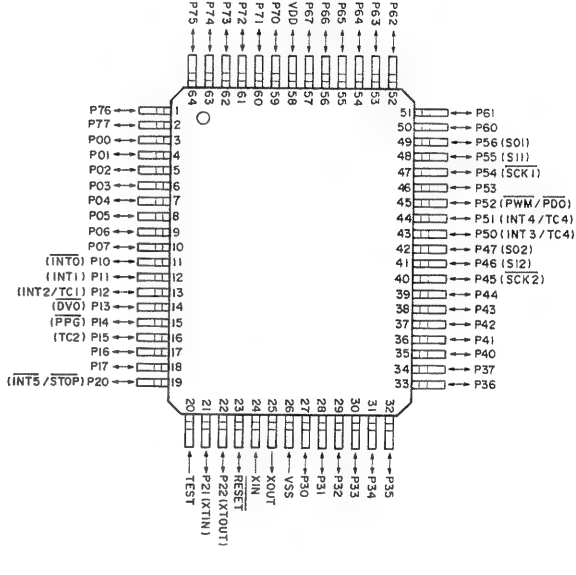
Table 5

TMP87CH00F (IC901)



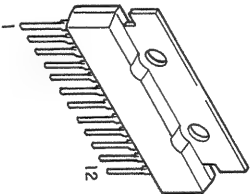
TMP87CH00F Terminal Function

| Pin No. | Terminal Name   | I/O | Ac-tive | Ini-tial | Usage                                                                             |
|---------|-----------------|-----|---------|----------|-----------------------------------------------------------------------------------|
| 1       | P76             | O   | H       | H        | [B] Video input control. (HD14051, 14052)                                         |
| 2       | P77             | O   | H       | H        | [C] Video input control. (HD14051, 14052)                                         |
| 3       | P00             | O   | H       | H        | [A] Video rec out control. (HD14051, 14052)                                       |
| 4       | P01             | O   | H       | H        | [B] Video rec out control. (HD14051, 14052)                                       |
| 5       | P02             | O   | H       | H        | [C] Video rec out control. (HD14051, 14052)                                       |
| 6       | P03             | O   | H#      | H        | [VCR-1] Rec inhibit. (#"H" at inhibit mode)                                       |
| 7       | P04             | O   | H#      | H        | [VCR-2] Rec inhibit. (#"H" at inhibit mode)                                       |
| 8       | P05             | O   | H       | L        | [CK] Audio I/O and surround analog switch. (LC7821, 7822) (#"H" at enable mode)   |
| 9       | P06             | O   | H       | L        | [DATA] Audio I/O and surround analog switch. (LC7821, 7822) (#"H" at enable mode) |
| 10      | P07             | O   | H#      | H        | [CE] Audio I/O and surround analog switch. (LC7821, 7822) (#"H" at enable mode)   |
| 11      | P10 (INT0)      | I   | L#      | —        | Power brakedown detection terminal. (#"L" at power brakedown mode)                |
| 12      | P11 (INT1)      | I   | H#      | —        | Protection input. (#"H" at protection mode)                                       |
| 13      | P12 (INT2/TC1)  | I   | H       | —        | Remote control receive signal input.                                              |
| 14      | P13 (DV0)       | I   | L       | —        | All times "L" active.                                                             |
| 15      | P14 (PPG)       | O   | H       | H        | [DM1] Pro-logic control. (SSM-2125)                                               |
| 16      | P15 (TC2)       | O   | H       | H        | [DM2] Pro-logic control. (SSM-2125)                                               |
| 17      | P16             | O   | H       | H        | [DM3] Pro-logic control. (SSM-2125)                                               |
| 18      | P17             | O   | H       | H        | [DM4] Pro-logic control. (SSM-2125)                                               |
| 19      | P20 (INT5/STOP) |     |         |          | Open.                                                                             |
| 20      | TEST            | I   | —       | —        | Connect to Ground.                                                                |
| 21      | P21 (XTIN)      | O   | H       | H        | [CM1] Pro-logic control. (SSM-2125)                                               |
| 22      | P22 (XTOUT)     | O   | H       | H        | [CM2] Pro-logic control. (SSM-2125)                                               |
| 23      | RESET           | I   | L       | —        | Reset signal input.                                                               |
| 24      | XIN             | I   | —       | —        | Connect to oscillator. (8 MHz)                                                    |
| 25      | XOUT            | O   | —       | —        | Connect to oscillator. (8 MHz)                                                    |
| 26      | VSS             | PS. | —       | —        | Power supply terminal. (0V)                                                       |
| 27      | P30             | O   | L       | L        | Master volume LED.                                                                |
| 28      | P31             | O   | L#      | L        | [FS] FL driver reset signal output. (#"L" at reset mode)                          |
| 29      | P32             | O   | L#      | L        | [STMONO] Stereo and monaural switching. (#"L" at stereo mode)                     |
| 30      | P33             | O   | L#      | H        | [SP-MAIN] Speaker relay control. (#"L" at speaker output mode)                    |
| 31      | P34             | O   | L#      | H        | [SP-REAR] Speaker relay control. (#"L" at speaker output mode)                    |
| 32      | P35             | O   | L#      | H        | [SP-CENTER] Speaker relay control. (#"L" at speaker output mode)                  |
| 33      | P36             | O   | L#      | H        | Remote power control. (#"L" at power on mode)                                     |
| 34      | P37             | O   | H#      | H        | [PRE OUT, H/P MUTE] (#"H" at mute mode)                                           |
| 35      | P40             | O   | H       | L        | [DATA] Electrical volume control. (TC9176N)                                       |
| 36      | P41             | O   | H       | L        | [CK] Electrical volume control. (TC9176N)                                         |
| 37      | P42             | O   | H       | L        | [S7] Electrical volume control. (TC9176N)                                         |
| 38      | P43             | O   | H       | L        | [VOL. UP] Electrical volume control. (BA6109)                                     |
| 39      | P44             | O   | H       | L        | [VOL. DOWN] Electrical volume control. (BA6109)                                   |

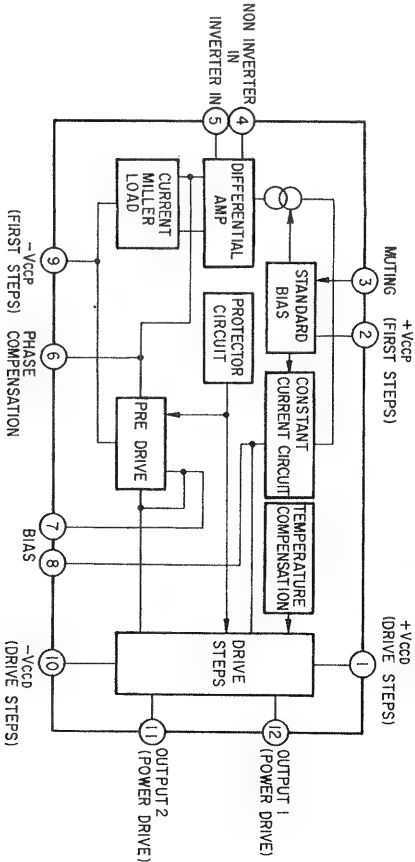
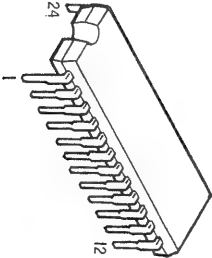


| Pin No. | Terminal Name  | I/O | Ac-tive | Ini-tial | Usage                                                                |
|---------|----------------|-----|---------|----------|----------------------------------------------------------------------|
| 40      | P45 (SCH2)     | O   | H       | L        | [CK] FL driver control. (MSC7128) (#"L" at data transfer mode)       |
| 41      | P46 (S12)      | O   | L#      | H        | [Req] FL driver control. (MSC7128) (#"L" at data transfer mode)      |
| 42      | P47 (SO2)      | O   | H       | L        | [DATA] FL driver control. (MSC7128) (#"L" at data transfer mode)     |
| 43      | P50 (INT3/TC3) | I   | H#      | —        | Tuned signal input. (#"H" at receive mode)                           |
| 44      | P51 (INT4/TC4) | I   | L#      | —        | Stereo signal input. (#"L" at stereo signal receive mode)            |
| 45      | P52 (PWM/PD)   | O   | H#      | H        | [TUNER MUTE] (#"H" at mute mode)                                     |
| 46      | P53            | O   | H#      | H        | [AMP MUTE] (#"H" at mute mode)                                       |
| 47      | P54 (SCK1)     | O   | H       | L        | [CK] Tuner PLL control. (LM7001)                                     |
| 48      | P55 (S11)      | O   | H       | L        | [S7] Tuner PLL control. (LM7001)                                     |
| 49      | P56 (SO1)      | O   | H       | L        | [DATA] Tuner PLL control. (LM7001)                                   |
| 50      | P60            | O   | H       | L        | [CK] Digital delay control. (M50198P) (#"L" at data transfer mode)   |
| 51      | P61            | O   | H       | L        | [DATA] Digital delay control. (M50198P) (#"L" at data transfer mode) |
| 52      | P62            | O   | L#      | H        | [Req] Digital delay control. (M50198P) (#"L" at data transfer mode)  |
| 53      | P63            | O   | H       | L        | [KS1] Key scan strobe.                                               |
| 54      | P64            | O   | H       | L        | [KS2] Key scan strobe.                                               |
| 55      | P65            | O   | H       | L        | [KS3] Key scan strobe.                                               |
| 56      | P66            | O   | H       | L        | [KS4] Key scan strobe.                                               |
| 57      | P67            | O   | H       | L        | [KS5] Key scan strobe.                                               |
| 58      | VDD            | PS. | —       | —        | Power supply terminal. (+5V)                                         |
| 59      | P70            | I   | H       | —        | [KA1] Key scan receive.                                              |
| 60      | P71            | I   | H       | —        | [KA2] Key scan receive.                                              |
| 61      | P72            | I   | H       | —        | [KA3] Key scan receive.                                              |
| 62      | P73            | I   | H       | —        | [KA4] Key scan receive.                                              |
| 63      | P74            | I   | H       | —        | [KA5] Key scan receive.                                              |
| 64      | P75            | O   | H       | H        | [A] Video input control. (HD14051, 14052)                            |

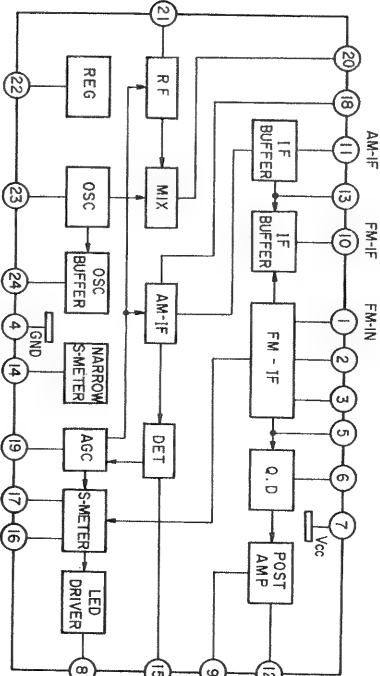
μPC1225H (IC301, 351, 352)



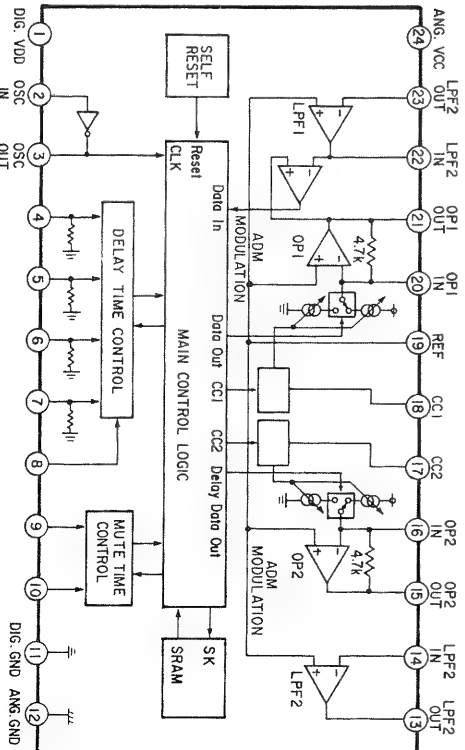
LA1266 (IC801)  
M50198P (IC403)



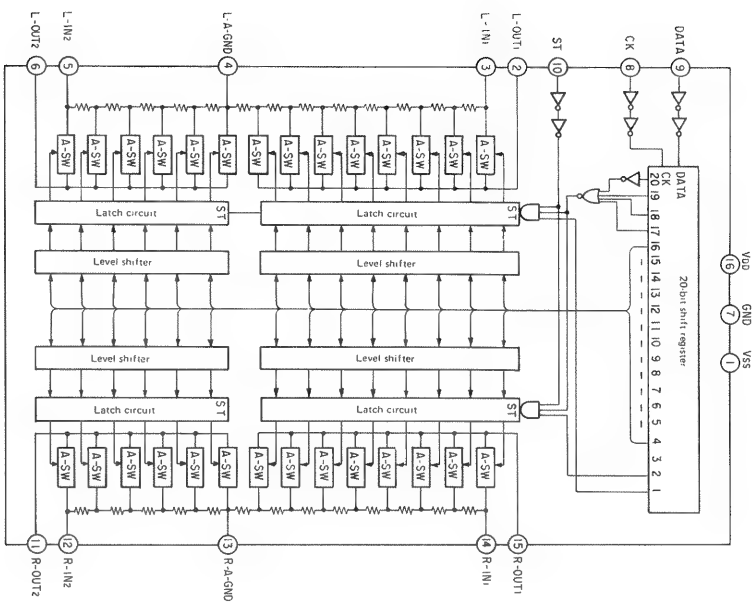
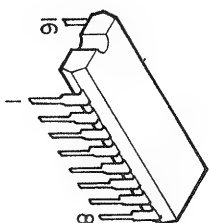
LA1266



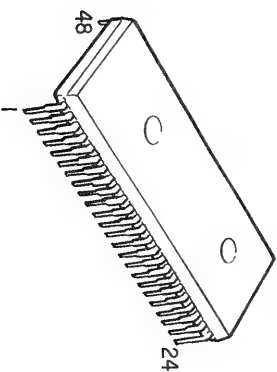
M50198P



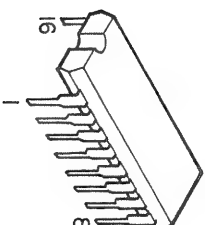
TC9176P  
(IC407)



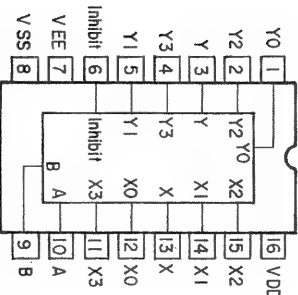
**SSM2125D**  
**(IC410)**



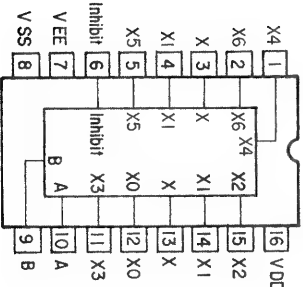
LM7001  
HD14051BP  
HD14052BP



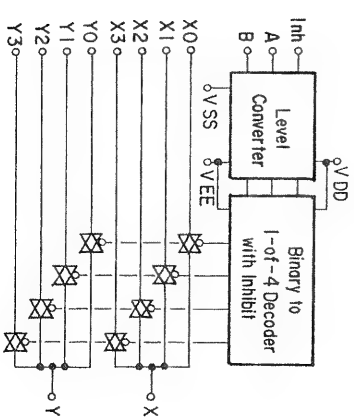
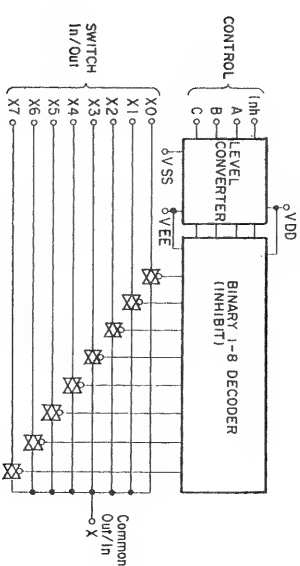
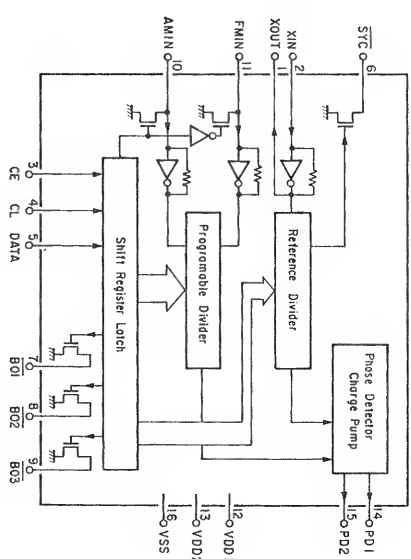
**HD14051BP  
(IC701, 702)**



**HD14052BP  
(IC704, 705)**



LM7001 (IC803)



LC7821 (IC102, 408)  
LC7822 (IC103, 104)

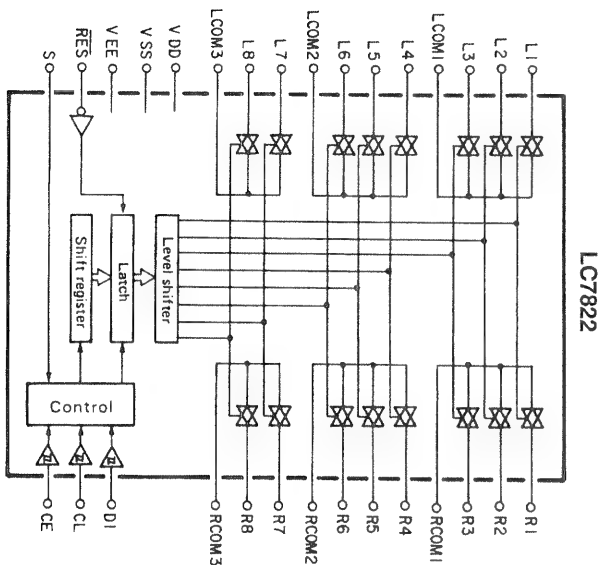
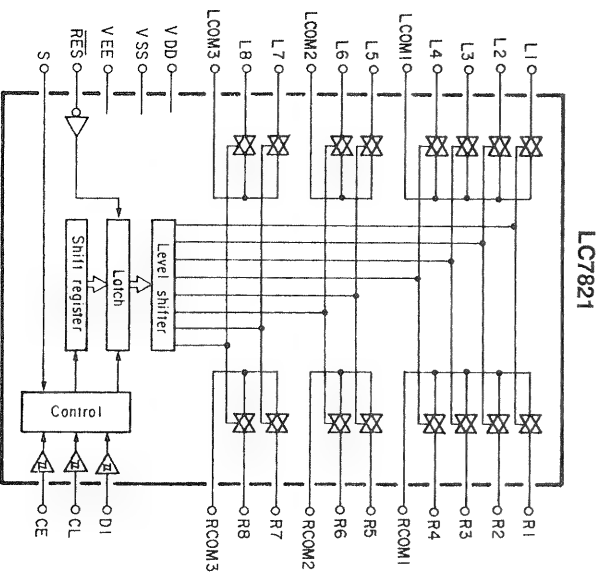
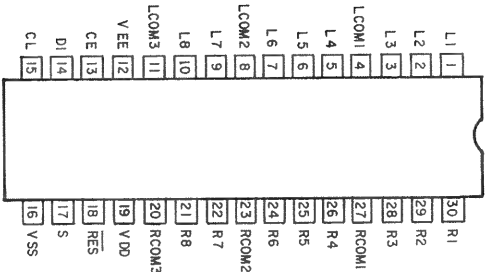
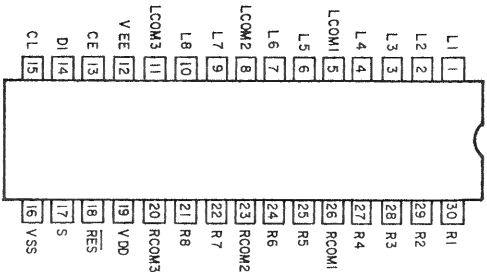
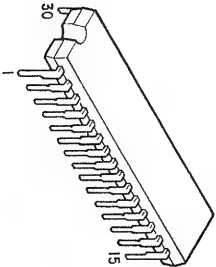


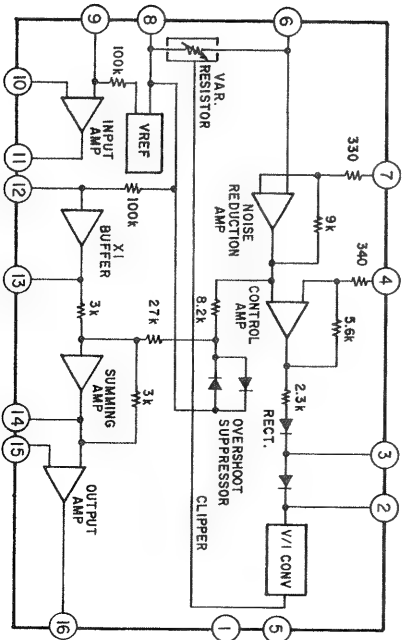
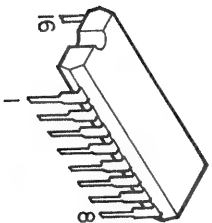
TABLE OF TERMINAL FUNCTION for LC7821, 7822

| Name of Terminal                                    | I/O | Equivalent Internal Circuit | Function of Terminal                                                                                                                                        |
|-----------------------------------------------------|-----|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V <sub>DD</sub> , V <sub>SS</sub> , V <sub>EE</sub> |     |                             | Power terminal.                                                                                                                                             |
| L1 ~ L8, R1 ~ R8, LCOM1 ~ LCOM4, BCOM1 ~ BCOM4      |     |                             | In/Out terminal of analog switch.                                                                                                                           |
| CL, DI, CE                                          | I   |                             | Serial data input terminal (Schmitt trigger).<br>CL = Clock input terminal.<br>DI = Data input terminal.<br>CE = Chip enable terminal.                      |
| S                                                   | I   |                             | Selection terminal for using of two.<br>Address will be shifted as per below table when switching S terminal to L or H.                                     |
| RES                                                 | I   |                             | Reset terminal.<br>Condition of analog switch is not fixed at the time turn on the power.<br>When shift this terminal to L, all analog switches become OFF. |

| Name of Item | S Terminal | Address |    |    |    |
|--------------|------------|---------|----|----|----|
|              |            | A0      | A1 | A2 | A3 |
| LC7821       | L          | 0       | 1  | 0  | 1  |
|              | H          | 1       | 1  | 0  | 1  |
| LC7822       | L          | 0       | 0  | 1  | 1  |
|              | H          | 1       | 0  | 1  | 1  |

Table 13

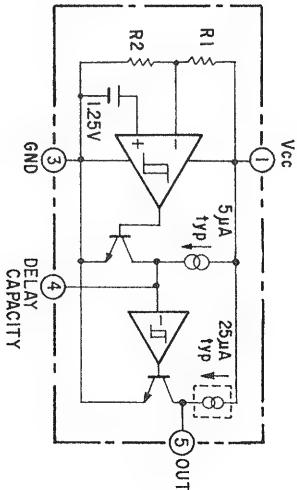
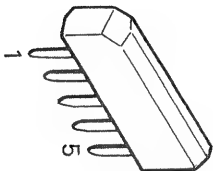
LA2730 (IC404)



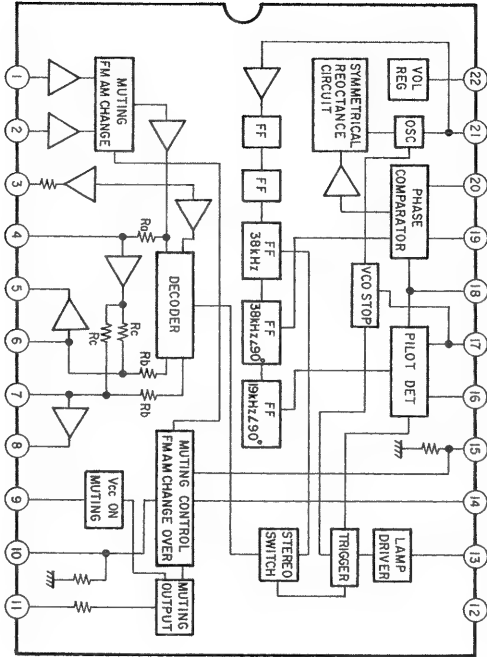
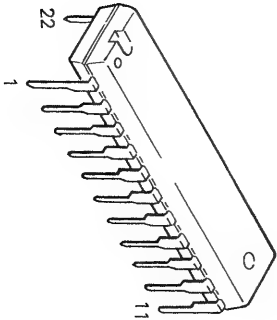
HD14066BP  
(IC703,706)



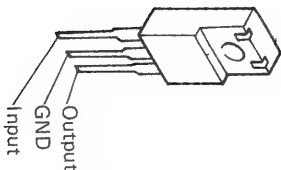
M51953B  
(IC902)



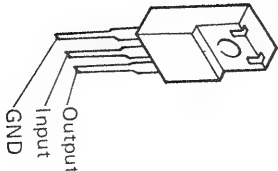
LA3401  
(IC802)



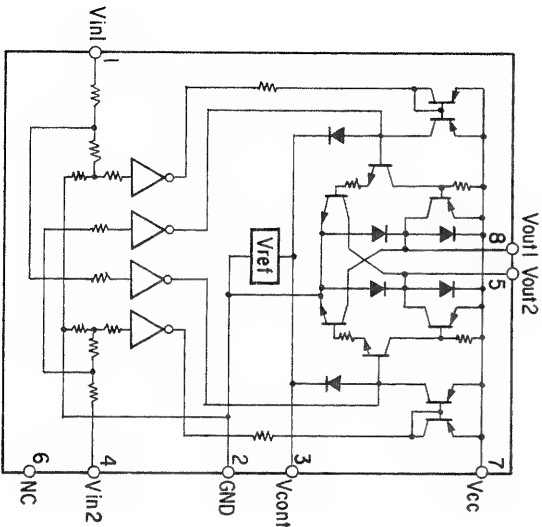
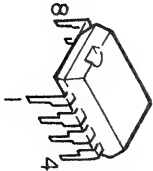
NUM7806FA (IC6, 9)  
NUM7815FA (IC1)



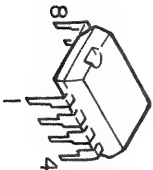
NUM7906FA (IC10)  
NUM7915FA (IC2)



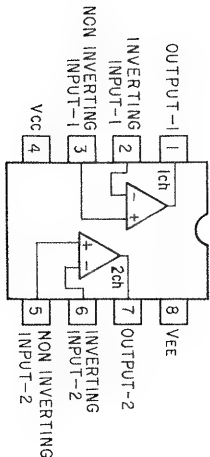
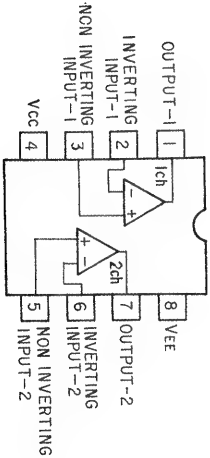
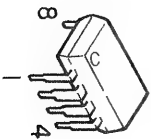
BA1639  
(IC651)



M5218AP (IC105, 231, 401, 402, 405, 406,  
IC409, 412, 415, 601, 653)

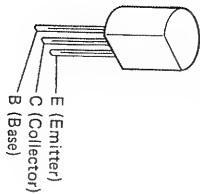


NUM4558D-D (IC101)

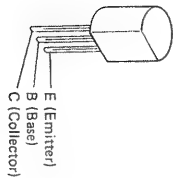


● TRANSISTORS

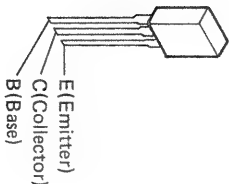
2SA970 (BL)  
2SA988 (E/F)  
2SA1015 (GR/Y), (GR)  
2SC1815 (BL), (Y)  
2SC1841 (E/F)  
2SC2878 (A/B)



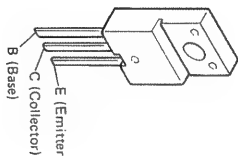
2SD667A (C)



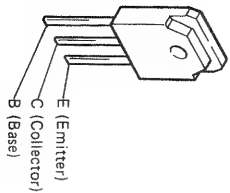
2SB1328 (P)  
2SD2004 (P)



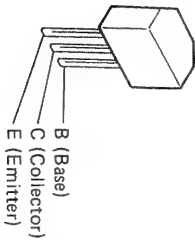
2SA1725 (Y)  
2SC4511 (Y)



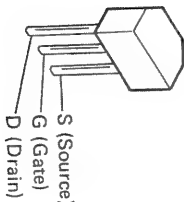
2SA1491 (O)/(P)/(Y)  
2SC3855 (O)/(P)/(Y)



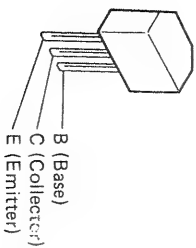
2SA1048 (GR)  
2SC2458 (Y/GR), (BL)  
2SC2839 (E)



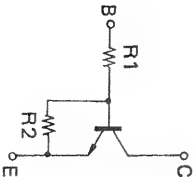
2SK365 (BL/GR)



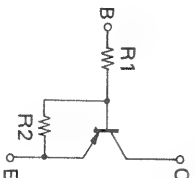
RN1204 (47k-47k)  
RN2202 (10k-10k)  
RN2204 (47k-47k)  
RN1241 (A/B)



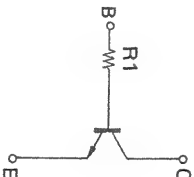
RN1204 (47k-47k)



RN2202 (10k-10k)  
RN2204 (47k-47k)



RN1241



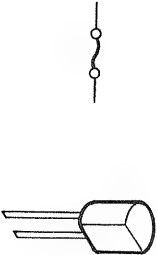
|        | R1   | R2   |
|--------|------|------|
| RN1204 | 47kΩ | 47kΩ |

|        | R1   | R2   |
|--------|------|------|
| RN2202 | 10kΩ | 10kΩ |
| RN2204 | 47kΩ | 47kΩ |

|        | R1    |
|--------|-------|
| RN1241 | 5.6kΩ |

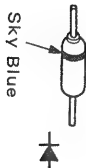
● IC PROTECTOR

ICP-N10 (IC3, 4)  
ICP-N15 (IC5, 8, 11, 12)

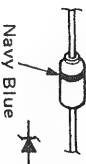


● DIODES (Included LED)

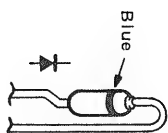
1SS270A  
1S2076A



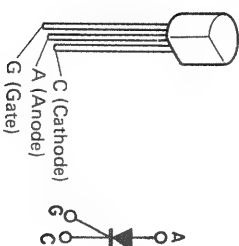
HZS7C-2  
HZS6B-3  
HZS3B-2  
HZS7B-3  
HZS9A-2  
HZS20-1  
HZS20-3



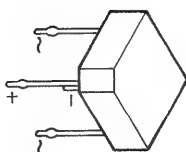
1SR35-200A



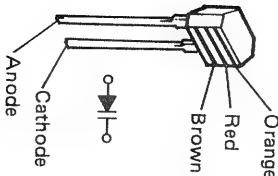
SFOR1A42  
(Thyristor)



4D4B42

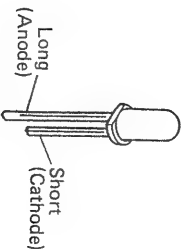
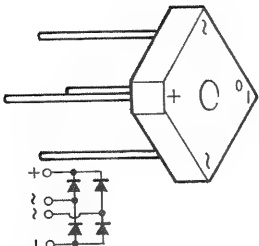


SVC321SPA-D-2



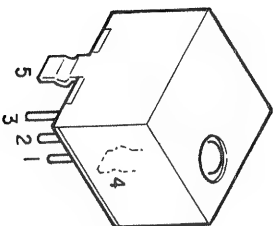
S4VB20

SEL1210S (Red)



● OTHERS

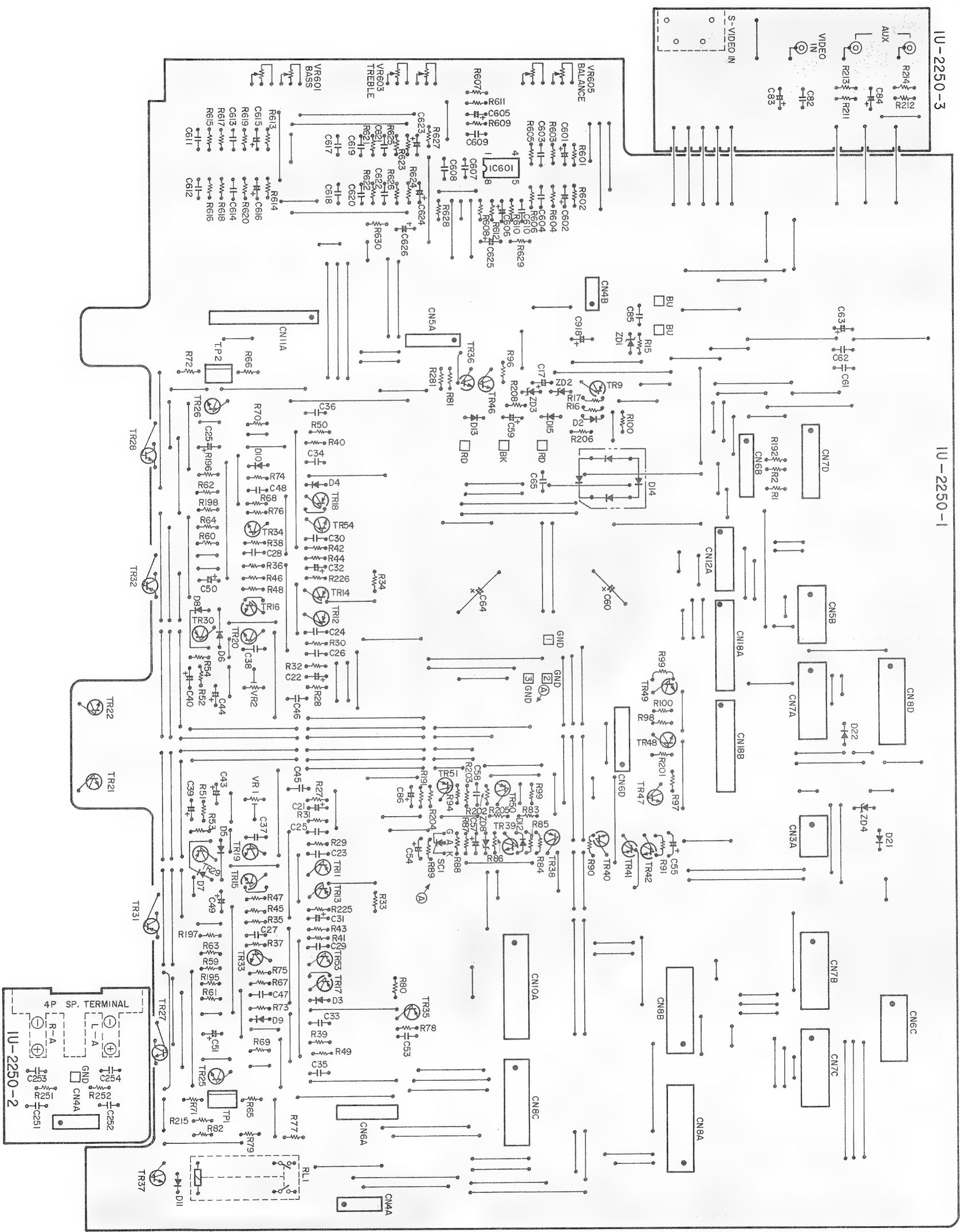
SBX1610-52 (Remote Control Receiver)



PRINTED WIRING BOARD (Pattern side)

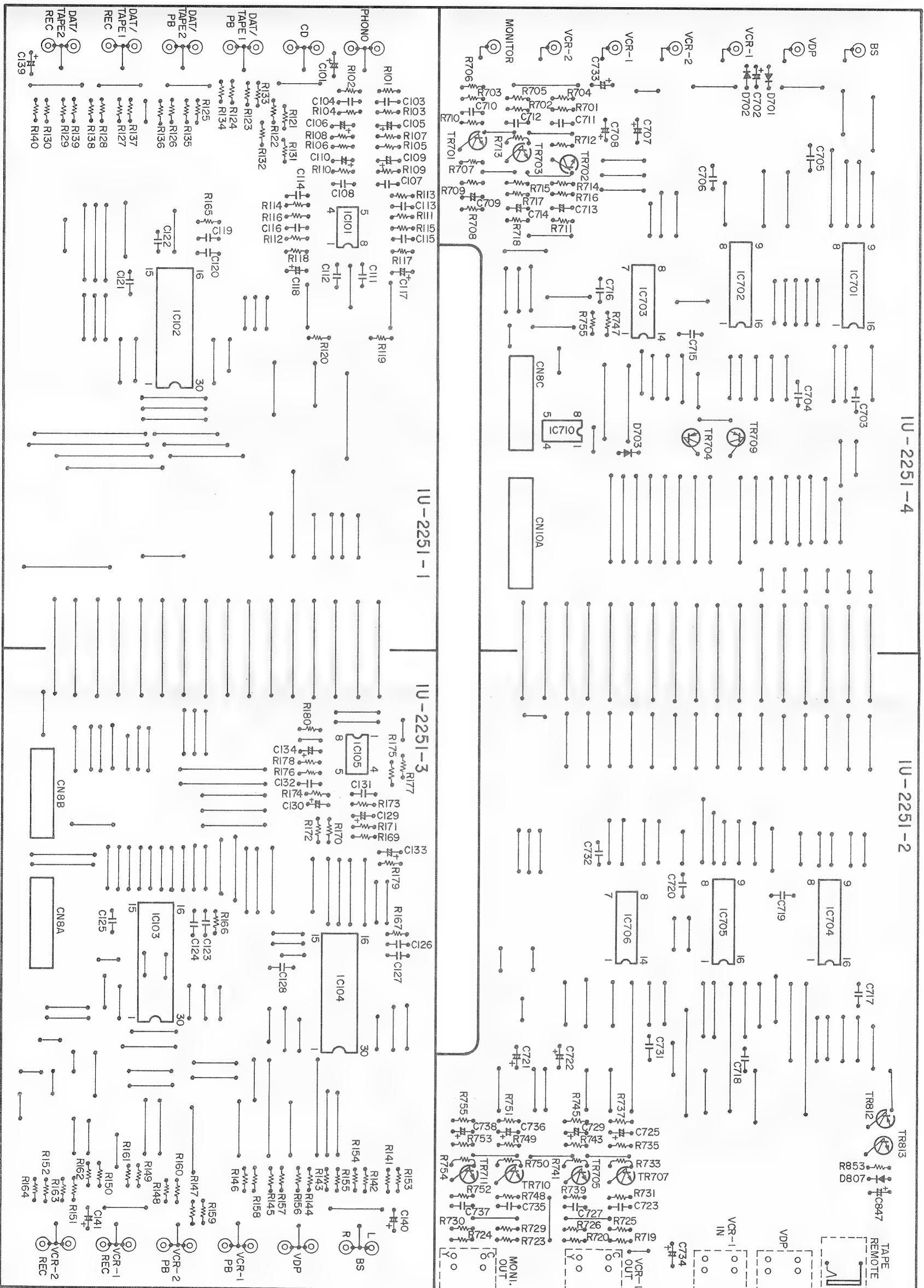
1 2 3 4 5 6 7 8

1U-2250 FRONT AMP. UNIT ASS'Y

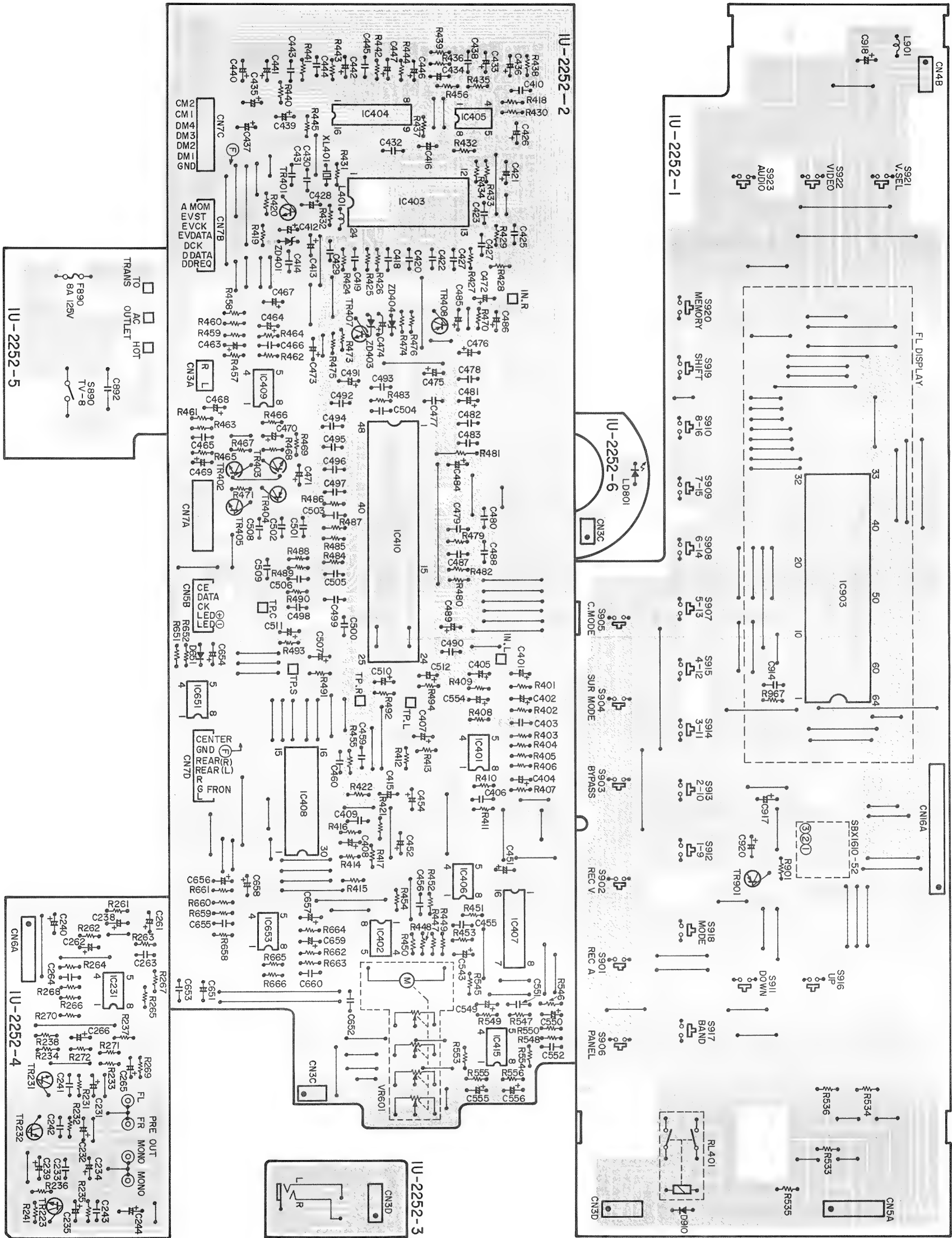




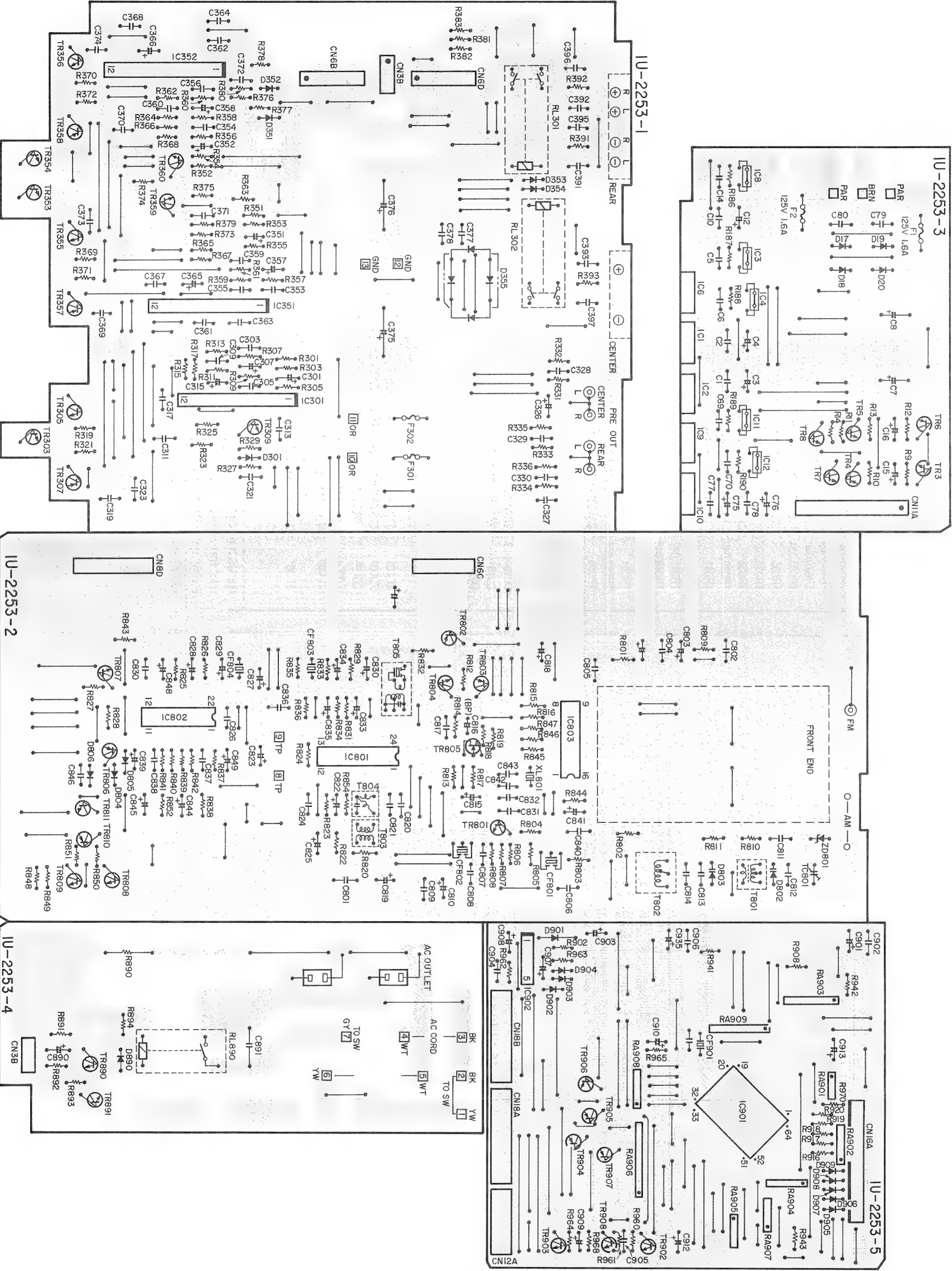
1U-2251 INPUT UNIT ASS'Y



1U-2252 SURROUND UNIT ASS'Y



1U-2253 REAR CENTER AMP UNIT ASS'Y




1 2 3 4 5 6 7 8

PRINTED WIRING BOARD PARTS LIST  
1U-2250 FRONT AMP UNIT

NOTE FOR PARTS LIST

- Part indicated with the mark " ◎ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "1" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "✱" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.: 

|      |          |       |         |           |        |
|------|----------|-------|---------|-----------|--------|
| RN   | 14K      | 2E    | 182     | G         | FR     |
| Type | Shape    | Power | Resist- | Allowable | Others |
|      | and per- |       | ance    | error     |        |
|      | formance |       |         |           |        |

|                                                                                    |                                                                      |                                                       |                                                                                                                         |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| RD : Carbon<br>RS : Fixed<br>RW : Winding<br>RN : Metal film<br>RK : Metal mixture | 2B : 1/4W<br>2E : 1/2W<br>3A : 1/4W<br>3D : 2W<br>3F : 3W<br>3H : 5W | F : ±1%<br>G : ±2%<br>J : ±5%<br>K : ±10%<br>M : ±20% | P : Pulse-resistant type<br>NL : Low noise type<br>NB : Non-burning type<br>FR : Fuse resistor<br>F : Lead wire forming |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|

\* Resistance

|                                                         |   |   |   |       |   |      |
|---------------------------------------------------------|---|---|---|-------|---|------|
| 1                                                       | 8 | 2 | ⇒ | 18000 | = | 18KΩ |
| Indicates number of zeros after effective number        |   |   |   |       |   |      |
| 2-digit effective number, decimal point indicated by R. |   |   |   |       |   |      |

• Units: Ω

● Capacitors

Ex.: 

|      |          |            |          |           |        |
|------|----------|------------|----------|-----------|--------|
| CE   | 04W      | 1H         | 2R2      | M         | BP     |
| Type | Shape    | Dielectric | Capacity | Allowable | Others |
|      | and per- | strength   |          | error     |        |
|      | formance |            |          |           |        |

|                                                                                                                                                                                                          |                                                                                                                                                     |                                                                                                                           |                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CE : Aluminum foil electrolyte<br>CA : Aluminum solid electrolyte<br>CS : Tantalum electrolyte<br>CO : Film<br>CK : Ceramic<br>CC : Ceramic<br>CP : Oil<br>CM : Mica<br>CF : Metalized<br>CH : Metalized | 0J : 6.3V<br>1A : 10V<br>1C : 16V<br>1E : 25V<br>1V : 35V<br>1H : 50V<br>2A : 100V<br>2B : 125V<br>2C : 160V<br>2D : 200V<br>2E : 250V<br>2J : 630V | F : ±1%<br>G : ±2%<br>J : ±5%<br>K : ±10%<br>M : ±20%<br>Z : +80%<br>P : +100%<br>C : ±0.25pf<br>D : ±0.5pf<br>= : Others | HS : High stability type<br>BP : Non-polar type<br>HR : Ripple-resistant type<br>DL : For charge and discharge<br>HF : For assuring high frequency<br>U : UL part<br>C : CSA part<br>F : Lead wire forming |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

\* Capacity

|                                                         |   |   |   |     |    |
|---------------------------------------------------------|---|---|---|-----|----|
| 2                                                       | R | 2 | ⇒ | 2.2 | μF |
| 1-digit effective number, decimal point indicated by R. |   |   |   |     |    |
| 2-digit effective number, decimal point indicated by R. |   |   |   |     |    |

• Units: μF, (for P, pf (pμF))

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value

| Ref. No.                                                                                                        | Part No.     | Part Name                | Remarks         |
|-----------------------------------------------------------------------------------------------------------------|--------------|--------------------------|-----------------|
| SEMICONDUCTOR GROUP                                                                                             |              |                          |                 |
| IC601                                                                                                           | 263 0711 000 | IC M5218AP               |                 |
| TR009                                                                                                           | 271 0131 924 | Transistor 2SA98B1 (E/F) |                 |
| TR011-014                                                                                                       | 271 0094 919 | Transistor 2SA970 (BL)   |                 |
| TR015,016                                                                                                       | 273 0235 923 | Transistor 2SC1841 (E/F) |                 |
| TR017,018                                                                                                       | 271 0131 924 | Transistor 2SA98B (E/F)  |                 |
| TR019,020                                                                                                       | 273 0235 923 | Transistor 2SC1841 (E/F) |                 |
| TR021,022                                                                                                       | 273 0198 905 | Transistor 2SC1815 (V)   |                 |
| TR025,026                                                                                                       | 274 0151 903 | Transistor 2SD2004 (P)   |                 |
| TR029,030                                                                                                       | 272 0107 003 | Transistor 2SB1328 (P)   |                 |
| TR033,034                                                                                                       | 273 0235 923 | Transistor 2SC1841 (E/F) |                 |
| TR035                                                                                                           | 271 0131 924 | Transistor 2SA98B (E/F)  |                 |
| TR036,307                                                                                                       | 273 0317 906 | Transistor 2SC2458 (BL)  |                 |
| TR038                                                                                                           | 271 0191 906 | Transistor 2SA1048 (GR)  |                 |
| TR039,040                                                                                                       | 273 0317 906 | Transistor 2SC2458 (BL)  |                 |
| TR041                                                                                                           | 271 0191 906 | Transistor 2SA1048 (GR)  |                 |
| TR042                                                                                                           | 273 0317 906 | Transistor 2SC2458 (BL)  |                 |
| TR046,047                                                                                                       | 273 0317 906 | Transistor 2SC2458 (BL)  |                 |
| TR048,049                                                                                                       | 273 0317 906 | Transistor 2SC2458 (BL)  |                 |
| TR050                                                                                                           | 271 0102 924 | Transistor 2SA1015 (GR)  |                 |
| TR051                                                                                                           | 271 0131 924 | Transistor 2SA98B (E/F)  |                 |
| TR053,054                                                                                                       | 273 0235 923 | Transistor 2SC1841 (E/F) |                 |
| TR055                                                                                                           | 273 0317 906 | Transistor 2SC2458 (BL)  |                 |
| DD02-004                                                                                                        | 276 0432 903 | Diode 1SS270A            |                 |
| DD05-008                                                                                                        | 276 0049 914 | Diode 1S2076A            |                 |
| DD09                                                                                                            | 276 0432 903 | Diode 1SS270A            |                 |
| DD10-012                                                                                                        | 276 0432 903 | Diode 1SS270A            |                 |
| DD13                                                                                                            | 276 0553 905 | Diode 1SR35-200A         |                 |
| DD14                                                                                                            | 276 0424 005 | Diode 4D4B42 (LC1)       |                 |
| DD15                                                                                                            | 276 0553 905 | Diode 1SR35-200A         |                 |
| DD21,022                                                                                                        | 276 0432 903 | Diode 1SS270A            |                 |
| DD23                                                                                                            | 276 0049 914 | Diode 1S2076A            |                 |
| ZD001                                                                                                           | 276 0476 910 | Zener Diode HZS9A-2      |                 |
| ZD002                                                                                                           | 276 0479 908 | Zener Diode HZS20-1      |                 |
| ZD003                                                                                                           | 276 0479 924 | Zener Diode HZS20-3      |                 |
| ZD004                                                                                                           | 276 0450 901 | Zener Diode HZS2B-1      |                 |
| ZD008                                                                                                           | 276 0465 925 | Zener Diode HZS7B-3      |                 |
| SC001                                                                                                           | 279 0016 904 | Thyristor SF0R1A42       |                 |
| RESISTOR GROUP<br>(Not included Carbon Film ±5%, 1/4W Type.<br>Refer to the Schematic Diagram for those parts.) |              |                          |                 |
| VR601,603,605                                                                                                   | 211 0704 003 | Variable Resistor        | 3 Gang VR       |
| VR001,002                                                                                                       | 211 6064 048 | Semi Fixed 5 Kohm        | V06PB502        |
| △ R016                                                                                                          | 244 2055 941 | Metal Oxide 330ohm, 1W   | RS14B3A331JS(S) |
| △ R035,036                                                                                                      | 241 2380 963 | Carbon 2.2Kohm, 1/4W(NB) | RD14B2E22JNBS   |
| △ R039,040                                                                                                      | 241 2377 976 | Carbon 130ohm, 1/4W(NB)  | RD14B2E131JNBS  |
| △ R045,046                                                                                                      | 241 2380 963 | Carbon 2.2Kohm, 1/4W(NB) | RD14B2E22JNBS   |
| △ R047,048                                                                                                      | 241 2315 967 | Fusible 680hm, 1/4W      | RD14B2EB80GFR   |
| △ R049,050                                                                                                      | 241 2377 976 | Carbon 130ohm, 1/4W(NB)  | RD14B2E131JNBS  |
| △ R039,060                                                                                                      | 241 2378 920 | Carbon 220ohm, 1/4W(NB)  | RD14B2E22JNBS   |
| △ R061-064                                                                                                      | 244 2043 982 | Metal Oxide 0.22ohm, 1W  | RS14B3AR22JS(S) |
| △ R067-070                                                                                                      | 241 2380 950 | Carbon 2Kohm, 1/4W(NB)   | RD14B2E20JNBS   |
| △ R082                                                                                                          | 241 2378 917 | Carbon 200ohm, 1/4W(NB)  | RD14B2E201JNBS  |
| △ R094                                                                                                          | 241 2378 932 | Metal Oxide 3.3Kohm, 1W  | RS14B3A332JS(S) |
| △ R100                                                                                                          | 241 2378 917 | Carbon 200ohm, 1/4W(NB)  | RD14B2E201JNBS  |
| △ R195-198                                                                                                      | 244 2043 982 | Metal Oxide 0.22ohm, 1W  | RS14B3AR22JS(S) |
| △ R201                                                                                                          | 241 2378 917 | Carbon 200ohm, 1/4W(NB)  | RD14B2E201JNBS  |
| △ R251,252                                                                                                      | 244 2043 937 | Metal Oxide 10ohm, 1W    | RS14B3A100JS(S) |
| △ R281                                                                                                          | 244 2052 944 | Metal Oxide 1.5Kohm, 1W  | RS14B3A152JS(S) |
| CAPACITOR GROUP                                                                                                 |              |                          |                 |
| C017                                                                                                            | 254 4260 948 | Electrolytic 1μF/50V     | CE04WH1010M     |
| C021,022                                                                                                        | 254 4254 909 | Electrolytic 10μF/16V    | CE04WC100M      |
| C023,024                                                                                                        | 253 1179 945 | Ceramic 220PF/50V        | CK45B1H221K     |
| C025,026                                                                                                        | 253 1179 903 | Ceramic 100PF/50V        | CK45B1H101K     |
| C027,028                                                                                                        | 255 1212 905 | Film 0.01μF/50V          | CO93MH103JT     |
| C029,030                                                                                                        | 253 1179 903 | Ceramic 100PF/50V        | CK45B1H101K     |
| C031,032                                                                                                        | 254 4256 952 | Electrolytic 220μF/25V   | CE04WE221M      |
| C033-036                                                                                                        | 255 1200 904 | Film 0.001μF/50V         | CO93MH102J      |
| C037,038                                                                                                        | 253 4482 901 | Ceramic 33PF/500V        | CC45SL2H330J    |
| C039,040                                                                                                        | 254 4260 948 | Electrolytic 1μF/50V     | CE04WH1010M     |
| C043,044                                                                                                        | 254 4260 948 | Electrolytic 1μF/50V     | CE04WH1010M     |
| C045,046                                                                                                        | 253 1128 909 | Ceramic 220PF/500V       | CK45B2H221K     |
| C047,048                                                                                                        | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z     |
| C049-052                                                                                                        | 254 4262 904 | Electrolytic 4.7μF/63V   | CE04W1J4F7M     |
| C053                                                                                                            | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z     |
| C054                                                                                                            | 254 4260 993 | Electrolytic 22μF/50V    | CE04W1H220M     |
| C055                                                                                                            | 254 4250 945 | Electrolytic 330μF/6.3V  | CE04W0331M      |
| C057                                                                                                            | 254 4261 905 | Electrolytic 33μF/50V    | CE04WH330M      |
| C058                                                                                                            | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z     |
| C059                                                                                                            | 254 4263 958 | Electrolytic 2.2μF/100V  | CE04W2A2R2M     |
| C061                                                                                                            | 256 1034 979 | Metalized 0.1μF/50V      | CF93A1H104JT    |
| C062                                                                                                            | 255 1212 905 | Film 0.01μF/50V          | CO93MH103JT     |
| C063                                                                                                            | 254 4260 948 | Electrolytic 1μF/50V     | CE04WH1010M     |
| C065,067,068                                                                                                    | 256 1042 903 | Metalized 0.1μF/250V     | CF93A2E104K     |
| C082                                                                                                            | 256 1034 979 | Metalized 0.1μF/50V      | CF93A1H104JT    |
| C083                                                                                                            | 254 4254 909 | Electrolytic 10μF/16V    | CE04WC100M      |
| C084                                                                                                            | 254 4260 948 | Electrolytic 1μF/50V     | CE04WH1010M     |
| C085                                                                                                            | 256 1034 979 | Metalized 0.1μF/50V      | CF93A1H104JT    |
| C086                                                                                                            | 254 4260 948 | Electrolytic 1μF/50V     | CE04WH1010M     |
| C252                                                                                                            | 256 1034 979 | Metalized 0.1μF/50V      | CF93A1H104J     |
| C253,254                                                                                                        | 255 1208 906 | Film 0.0047μF/50V        | CO93MH472JT     |
| C601,602                                                                                                        | 254 4254 909 | Electrolytic 10μF/16V    | CE04WC100M      |
| C603,604                                                                                                        | 253 1179 903 | Ceramic 100PF/50V        | CK45B1H101K     |
| C605,606                                                                                                        | 254 4260 977 | Electrolytic 4.7μF/50V   | CE04W1H4F7M     |
| C607                                                                                                            | 256 1034 937 | Metalized 0.047μF/50V    | CF93A1H473JT    |
| C608                                                                                                            | 253 1181 917 | Ceramic 0.022μF/50V      | CK45F1H223Z     |

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## 1U-2251 INPUT UNIT PARTS LIST

| Ref. No. | Part No.     | Part Name               | Remarks            |
|----------|--------------|-------------------------|--------------------|
| C609,610 | 253 1179 903 | Ceramic 100PF/50V       | CK45B1H101K (DD-3) |
| C611,612 | 255 1200 904 | Film 0.001μF/50V        | CQ93M1H102J        |
| C613,614 | 256 1034 995 | Metallized 0.15μF/50V   | CF93A1H154J        |
| C615,616 | 254 4260 948 | Electrolytic 1μF/50V    | CE04W1H010M        |
| C617,618 | 255 1203 901 | Film 0.0018μF/50V       | CQ93M1H182J        |
| C619,620 | 255 1213 904 | Film 0.012μF/50V        | CQ93M1H123JT       |
| C621,622 | 256 1034 953 | Metallized 0.068μF/50V  | CF93A1H683JT       |
| C623,624 | 254 4260 935 | Electrolytic 0.47μF/50V | CE04W1HR47M        |
| C625,626 | 254 4254 909 | Electrolytic 10μF/16V   | CE04W1C100M        |
| C852     | 254 4250 929 | Electrolytic 100μF/6.3V | CE04W0J101M        |
| C853     | 254 4254 941 | Electrolytic 100μF/16V  | CE04W1C101M        |
| C854     | 254 4256 936 | Electrolytic 47μF/25V   | CE04W1E470M        |
| C918     | 254 4261 743 | Electrolytic 330μF/50V  | CE04W1H331MC       |

## OTHER PARTS

Q'ty

|         |              |                      |   |
|---------|--------------|----------------------|---|
| RL001   | 214 0129 001 | RELAY (DH2TV)        | 1 |
|         | 204 8342 003 | 3P PIN JACK (C-GND)  | 1 |
|         | 205 0605 000 | S-TERMINAL           | 1 |
|         | 205 0635 009 | 4P SP TERMINAL (V-1) | 1 |
| T.P     | 205 0190 036 | 3P NH CONNECTOR BASE | 2 |
| CN10A   | 205 0696 006 | JL CONNECTOR (BT-E)  | 1 |
| CN3A    | 205 0696 035 | JL CONNECTOR (BT-E)  | 1 |
| CN5B    | 205 0696 051 | JL CONNECTOR (BT-E)  | 1 |
| CN6C    | 205 0696 064 | JL CONNECTOR (BT-E)  | 1 |
| CN7A,7B | 205 0696 077 | JL CONNECTOR (BT-E)  | 4 |
| 7C,7D   |              |                      |   |
| CN8A,8B | 205 0696 080 | JL CONNECTOR (BT-E)  | 4 |
| 8C,8D   |              |                      |   |
| CN12A   | 205 0699 029 | BTEM CONNECTOR (1S)  | 1 |
| CN18A,B | 205 0699 087 | BTEM CONNECTOR (1S)  | 2 |

## 1U-2250C FRONT AMP UNIT PARTS LIST

for multivoltage model

Same as 1U-2250 for U.S.A. model except the followings.

| Ref. No. | Part No.     | Part Name   | Remarks     | Q'ty |
|----------|--------------|-------------|-------------|------|
|          | 205 0550 003 | 4P TERMINAL | for Speaker | 1    |

| Ref. No.                                         | Part No.     | Part Name                   | Remarks            |
|--------------------------------------------------|--------------|-----------------------------|--------------------|
| SEMICONDUCTOR GROUP                              |              |                             |                    |
| IC101                                            | 265 0030 004 | IC NJM4558D-D               |                    |
| IC102                                            | 262 1227 008 | IC LC7821                   |                    |
| IC103~104                                        | 262 1228 007 | IC LC7822                   |                    |
| IC105                                            | 263 0711 000 | IC M5218AP                  |                    |
| IC701~702                                        | 262 0621 003 | IC HD14051BP                |                    |
| IC703                                            | 262 0276 005 | IC HD14066BP                |                    |
| IC704~705                                        | 262 0628 006 | IC HD14052BP                |                    |
| IC706                                            | 262 0276 005 | IC HD14066BP                |                    |
| TR701~703                                        | 273 0198 918 | Transistor 2SC1815 (BL)     |                    |
| TR704                                            | 269 0030 909 | Transistor RN2204 (47K-47K) | Digital            |
| TR705                                            | 273 0198 918 | Transistor 2SC1815 (BL)     |                    |
| TR707                                            | 273 0198 918 | Transistor 2SC1815 (BL)     |                    |
| TR709                                            | 269 0030 909 | Transistor RN2204 (47K-47K) | Digital            |
| TR710~711                                        | 273 0198 918 | Transistor 2SC1815 (BL)     |                    |
| TR812                                            | 269 0030 909 | Transistor RN2204 (47K-47K) | Digital            |
| TR813                                            | 269 0029 907 | Transistor RN1204 (47K-47K) | Digital            |
| D703                                             | 276 0432 903 | Diode 1SS270A               |                    |
| D807                                             | 276 0432 903 | Diode 1SS270A               |                    |
| RESISTOR GROUP                                   |              |                             |                    |
| (Not included Carbon Film $\pm 5\%$ , 1/4W Type. |              |                             |                    |
| Refer to the Schematic Diagram for those parts.) |              |                             |                    |
| CAPACITOR GROUP                                  |              |                             |                    |
| C101                                             | 254 4260 948 | Electrolytic 1μF/50V        | CE04W1H010M        |
| C103,104                                         | 253 4443 908 | Ceramic 200PF/50V           | CC45SL1H201J       |
| C105,106                                         | 254 4254 909 | Electrolytic 10μF/16V       | CE04W1C100M        |
| C107,108                                         | 253 1179 987 | Ceramic 470PF/50V           | CK45B1H471K (DD-3) |
| C109,110                                         | 254 4250 932 | Electrolytic 220μF/6.3V     | CE04W0J221M        |
| C111,112                                         | 253 1181 917 | Ceramic 0.022μF/50V         | CK45F1H223Z (DD-3) |
| C113,114                                         | 255 4199 999 | Film 0.024μF/50V            | CQ92M1H243J (MRZ)  |
| C115,116                                         | 255 1210 907 | Film 0.0068μF/50V           | CQ93M1H682J        |
| C117,118                                         | 254 4260 951 | Electrolytic 2.2μF/50V      | CE04W1H2R2M        |
| C119~121                                         | 253 1181 917 | Ceramic 0.022μF/50V         | CK45F1H223Z (DD-3) |
| C122                                             | 255 1204 900 | Film 0.0022μF/50V           | CQ93M1H222J        |
| C123~128                                         | 253 1181 917 | Ceramic 0.022μF/50V         | CK45F1H223Z (DD-3) |
| C129,130                                         | 254 4260 948 | Electrolytic 1μF/50V        | CE04W1H010M        |
| C131,132                                         | 253 1179 903 | Ceramic 100PF/50V           | CK45B1H101K (DD-3) |
| C133,134                                         | 254 4260 948 | Electrolytic 1μF/50V        | CE04W1H010M        |
| C139~141                                         | 254 4260 948 | Electrolytic 1μF/50V        | CE04W1H010M        |
| C702                                             | 254 4260 948 | Electrolytic 1μF/50V        | CE04W1H010M        |
| C703~706                                         | 253 1181 904 | Ceramic 0.01μF/50V          | CK45F1H103Z (DD-3) |

## 1U-2252 SURROUND UNIT PARTS LIST

| Ref. No. | Part No.     | Part Name                     | Remarks                |
|----------|--------------|-------------------------------|------------------------|
| C707,708 | 254 4252 079 | Electrolytic 1000 $\mu$ F/10V | CE04W1A102M            |
| C709     | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C710~712 | 253 1179 945 | Ceramic 220PF/50V             | CK45B1H221KT<br>(DD-3) |
| C713,714 | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C715~720 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V      | CK45F1H103Z<br>(DD-3)  |
| C721,722 | 254 4252 079 | Electrolytic 1000 $\mu$ F/10V | CE04W1A102M            |
| C723     | 253 1179 987 | Ceramic 470PF/50V             | CK45B1H471KT<br>(DD-3) |
| C725     | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C727     | 253 1179 987 | Ceramic 470PF/50V             | CK45B1H471K<br>(DD-3)  |
| C729     | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C731,732 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V      | CK45F1H103Z<br>(DD-3)  |
| C733,734 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C735     | 253 1179 987 | Ceramic 470PF/50V             | CK45B1H471K<br>(DD-3)  |
| C736     | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C737     | 253 1179 987 | Ceramic 470PF/50V             | CK45B1H471K<br>(DD-3)  |
| C738     | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C847     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |

## OTHER PARTS

Q'ty

|         |              |                     |         |   |
|---------|--------------|---------------------|---------|---|
|         | 204 8278 009 | 6P Pin Jack (S-GND) | White   | 2 |
|         | 204 8346 009 | 6P Pin Jack         | Red     | 2 |
|         | 204 8260 004 | Mini Jack           | Remocon | 1 |
|         | 204 8309 004 | 4P Pin Jack (C-GND) |         | 1 |
|         | 204 8308 005 | 3P Pin Jack (C-GND) |         | 1 |
|         | 205 0578 001 | S-Terminal          |         | 4 |
| CN8A,8B | 205 0697 089 | JL Connector (F-E)  |         | 3 |
| 8C      |              |                     |         |   |
| CN10A   | 205 0697 005 | JL Connector (F-E)  |         | 1 |

| Ref. No.                                                                                             | Part No.     | Part Name                        | Remarks               |
|------------------------------------------------------------------------------------------------------|--------------|----------------------------------|-----------------------|
| <b>SEMICONDUCTOR GROUP</b>                                                                           |              |                                  |                       |
| IC231                                                                                                | 263 0711 000 | IC M5218AP                       | Surround              |
| IC401,402                                                                                            | 263 0711 000 | IC M5218AP                       |                       |
| IC403                                                                                                | 262 1198 001 | IC M50198P                       |                       |
| IC404                                                                                                | 263 0600 001 | IC LA2730                        |                       |
| IC405,406                                                                                            | 263 0711 000 | IC M5218AP                       |                       |
| IC407                                                                                                | 262 0625 009 | IC TC9176P                       |                       |
| IC408                                                                                                | 262 1227 008 | IC LC7821                        |                       |
| IC409                                                                                                | 263 0711 000 | IC M5218AP                       |                       |
| IC410                                                                                                | 263 0756 010 | IC SSM2125                       |                       |
| IC415                                                                                                | 263 0711 000 | IC M5218AP                       |                       |
| IC651                                                                                                | 263 0476 002 | IC LB1639                        | FL Driver             |
| IC653                                                                                                | 263 0711 000 | IC M5218AP                       |                       |
| IC903                                                                                                | 262 1418 008 | IC MSC7128-03SS                  |                       |
| TR231~233                                                                                            | 269 0107 900 | Transistor RN1241(A/B)           | Digital               |
| TR401                                                                                                | 274 0060 900 | Transistor 2SD667A(C)            | Digital               |
| TR402,403                                                                                            | 269 0107 900 | Transistor RN1241 (A/B)          |                       |
| TR404                                                                                                | 269 0026 900 | Transistor RN2202<br>(10K-10K)   | Digital               |
| TR405                                                                                                | 269 0029 907 | Transistor RN1204<br>(47K-47K)   | Digital               |
| TR407                                                                                                | 273 0198 905 | Transistor 2SC1815 (Y)           | Digital               |
| TR408                                                                                                | 271 0102 924 | Transistor 2SA1015 (GR)          |                       |
| TR901                                                                                                | 269 0030 909 | Transistor RN2204<br>(47K-47K)   |                       |
|                                                                                                      |              |                                  |                       |
| D651,910                                                                                             | 276 0432 903 | Diode 1SS270A                    | Red                   |
| ZD401                                                                                                | 276 0462 928 | Zener Diode HZS6B-3TD            |                       |
| ZD403,404                                                                                            | 276 0466 911 | Zener Diode HZS7C-2TD            |                       |
|                                                                                                      |              |                                  |                       |
| LD801                                                                                                | 393 9434 906 | LED SEL1210S                     |                       |
| <b>RESISTOR GROUP</b>                                                                                |              |                                  |                       |
| (Not included Carbon Film $\pm 5\%$ , 1/4W Type.<br>Refer to the Schematic Diagram for those parts.) |              |                                  |                       |
| $\Delta$ R419                                                                                        | 241 2387 940 | Carbon 4.7ohm, 1/4W (N.B)        | RD14B2E4R7JNBS        |
| $\Delta$ R445                                                                                        | 241 2379 903 | Carbon 470ohm, 1/4W (N.B)        | RD14B2E471JNBS        |
| $\Delta$ R475,476                                                                                    | 244 2052 928 | Metal Oxide 47ohm, 1W            | RS14B3A470JS(S)       |
| $\Delta$ R533~536                                                                                    | 244 2052 960 | Metal Oxide 220ohm, 1W           | RS14B3A221JS(S)       |
| $\Delta$ R481                                                                                        | 242 0203 003 | Carbon Composite<br>10Mohm, 1/4W | RC05GF2E106K          |
| VR651                                                                                                | 211 0703 004 | Variable Resistor 100Kohm        | with Motor            |
| <b>CAPACITOR GROUP</b>                                                                               |              |                                  |                       |
| C231,232                                                                                             | 254 4254 909 | Electrolytic 10 $\mu$ F/16V      | CE04W1C100M           |
| C233                                                                                                 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V         | CK45F1H103Z<br>(DD-3) |
| C234                                                                                                 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V       | CE04W1H010M           |
| C235                                                                                                 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V      | CE04W1C100M           |
| C238                                                                                                 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V       | CE04W1H010M           |
| C239                                                                                                 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V      | CE04W1C100M           |

| Ref. No. | Part No.     | Part Name                     | Remarks                |
|----------|--------------|-------------------------------|------------------------|
| C240     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C241~243 | 253 1179 903 | Ceramic 100PF/50V             | CK45B1H101K<br>(DD-3)  |
| C261,262 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C263,264 | 253 1179 903 | Ceramic 100PF/50V             | CK45B1H101K<br>(DD-3)  |
| C265,266 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C401,402 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C403     | 253 1179 903 | Ceramic 100PF/50V             | CK45B1H101K<br>(DD-3)  |
| C404,405 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C406     | 253 1179 903 | Ceramic 100PF/50V             | CK45B1H101K<br>(DD-3)  |
| C407     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C408     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C409     | 253 1179 903 | Ceramic 100PF/50V             | CK45B1H101K            |
| C410     | 255 1212 905 | Film 0.01 $\mu$ F/50V         | CQ93M1H103J            |
| C412     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C413     | 254 4250 929 | Electrolytic 100 $\mu$ F/6.3V | CE04W0J011M            |
| C414     | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V      | CK45F1H103Z<br>(DD-3)  |
| C415     | 254 4258 950 | Electrolytic 100 $\mu$ F/35V  | CE04W1V101M            |
| C416     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C418     | 253 1179 990 | Ceramic 560PF/50V             | CK45B1H561K<br>(DD-3)  |
| C419     | 255 1209 905 | Film 0.0056 $\mu$ F/50V       | CQ93M1H562J            |
| C420     | 256 1034 979 | Metallized 0.1 $\mu$ F/50V    | CF93A1H104J            |
| C421     | 254 4254 954 | Electrolytic 220 $\mu$ F/16V  | CE04W1C221M            |
| C422~424 | 256 1034 979 | Metallized 0.1 $\mu$ F/50V    | CF93A1H104J            |
| C425     | 255 1202 902 | Film 0.0015 $\mu$ F/50V       | CQ93M1H152J            |
| C426     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C427     | 253 1179 958 | Ceramic 270PF/50V             | CK45B1H271K<br>(DD-3)  |
| C428     | 254 4250 958 | Electrolytic 470 $\mu$ F/6.3V | CE04W0J471J            |
| C429     | 255 1212 905 | Film 0.01 $\mu$ F/50V         | CQ93M1H103J            |
| C430     | 253 1179 916 | Ceramic 120PF/50V             | CK45B1H121K<br>(DD-3)  |
| C431     | 253 4537 908 | Ceramic 27PF/50V              | CC45SL1H270J<br>(DD-3) |
| C432     | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V      | CK45F1H103Z<br>(DD-3)  |
| C433~437 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C438     | 255 1209 905 | Film 0.0056 $\mu$ F/50V       | CQ93M1H562J            |
| C439     | 254 4256 949 | Electrolytic 100 $\mu$ F/25V  | CE04W1E101M            |
| C440     | 254 4260 922 | Electrolytic 0.33 $\mu$ F/50V | CE04W1HR33M            |
| C441     | 254 4260 906 | Electrolytic 0.1 $\mu$ F/50V  | CE04W1H0R1M            |
| C442     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C443     | 255 1218 909 | Film 0.033 $\mu$ F/50V        | CQ93M1H333J            |
| C444     | 255 1217 900 | Film 0.027 $\mu$ F/50V        | CQ93M1H273J            |
| C445     | 255 1208 906 | Film 0.0047 $\mu$ F/50V       | CQ93M1H472J            |
| C446     | 254 4252 930 | Electrolytic 100 $\mu$ F/10V  | CE04W1A101M            |
| C447     | 254 4254 912 | Electrolytic 22 $\mu$ F/16V   | CE04W1C220M            |
| C451,452 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C453     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V    | CE04W1H010M            |
| C454     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V   | CE04W1C100M            |
| C455,456 | 253 1179 903 | Ceramic 100PF/50V             | CK45B1H101K<br>(DD-3)  |

| Ref. No. | Part No.     | Part Name                          | Remarks               |
|----------|--------------|------------------------------------|-----------------------|
| C459,460 | 253 1181 917 | Ceramic 0.022 $\mu$ F/50V          | CK45F1H223Z<br>(DD-3) |
| C463,464 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C465,466 | 253 1179 903 | Ceramic 100PF/50V                  | CK45B1H101K<br>(DD-3) |
| C467,468 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M           |
| C469~472 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C473,474 | 254 4261 918 | Electrolytic 47 $\mu$ F/50V        | CE04W1H470M           |
| C475,476 | 254 4254 941 | Electrolytic 100 $\mu$ F/16V       | CE04W1C101M           |
| C477,478 | 256 1034 979 | Metallized 0.1 $\mu$ F/50V         | CF93A1H104J           |
| C479,480 | 255 1212 905 | Film 0.01 $\mu$ F/50V              | CQ93M1H103J           |
| C481     | 254 4258 905 | Electrolytic 4.7 $\mu$ F/35V       | CE04W1V4R7M           |
| C482,483 | 256 1035 910 | Metallized 0.22 $\mu$ F/50V        | CF93A1H224J           |
| C484     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C485,486 | 254 4258 905 | Electrolytic 4.7 $\mu$ F/35V       | CE04W1V4R7M           |
| C487     | 256 1035 091 | Metallized 1 $\mu$ F/50V           | CF93A1H105J           |
| C488     | 255 1212 905 | Film 0.01 $\mu$ F/50V              | CQ93M1H103J           |
| C489     | 254 4256 949 | Electrolytic 100 $\mu$ F/25V       | CE04W1E101M           |
| C490     | 256 1034 979 | Metallized 0.1 $\mu$ F/50V         | CF93A1H104J           |
| C491     | 254 4258 905 | Electrolytic 4.7 $\mu$ F/35V       | CE04W1V4R7M           |
| C492,493 | 256 1035 910 | Metallized 0.22 $\mu$ F/50V        | CF93A1H224J           |
| C494~497 | 256 1035 936 | Metallized 0.33 $\mu$ F/50V        | CF93A1H334J           |
| C498,499 | 255 1216 901 | Film 0.022 $\mu$ F/50V             | CQ93M1H223J           |
| C500~502 | 256 1034 979 | Metallized 0.1 $\mu$ F/50V         | CF93A1H104J           |
| C503     | 253 1180 905 | Ceramic 680PF/50V                  | CK45B1H681K<br>(DD-3) |
| C504,505 | 255 1216 901 | Film 0.022 $\mu$ F/50V             | CQ93M1H223J           |
| C506     | 253 1180 905 | Ceramic 680PF/50V                  | CK45B1H681K<br>(DD-3) |
| C507     | 254 4258 905 | Electrolytic 4.7 $\mu$ F/35V       | CE04W1V4R7M           |
| C508,509 | 256 1034 979 | Metallized 0.1 $\mu$ F/50V         | CF93A1H104J           |
| C510~512 | 254 4258 905 | Electrolytic 4.7 $\mu$ F/35V       | CE04W1V4R7M           |
| C549,550 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C551,552 | 253 1179 903 | Ceramic 100PF/50V                  | CK45B1H101K<br>(DD-3) |
| C554~556 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C560     | 254 4260 045 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M           |
| C651     | 254 3056 917 | Electrolytic 1 $\mu$ F/50V(Bipole) | CE04D1H010MBP         |
| C652,653 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V           | CK45F1H103Z<br>(DD-3) |
| C654     | 254 4252 927 | Electrolytic 47 $\mu$ F/10V        | CE04W1A470M           |
| C655     | 253 1179 903 | Ceramic 100PF/50V                  | CK45B1H101K<br>(DD-3) |
| C656     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C657,658 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M           |
| C659     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V        | CE04W1C100M           |
| C660     | 253 1179 903 | Ceramic 100PF/50V                  | CK45B1H101K<br>(DD-3) |
| C661     | 254 4254 941 | Electrolytic 100 $\mu$ F/16V       | CE04W1C101M           |
| C892     | 253 8014 702 | Ceramic 0.01 $\mu$ F/400V(AC)      | CK45F2GAC103MC        |
| C914     | 253 1179 903 | Ceramic 100PF/50V                  | CK45B1H101K<br>(DD-3) |
| C915     | 255 1212 905 | Film 0.01 $\mu$ F/50V              | CQ93M1H103J           |
| C916     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M           |
| C917     | 254 4250 945 | Electrolytic 330 $\mu$ F/6.3V      | CE04W0J331M           |
| C918     | 254 4261 921 | Electrolytic 100 $\mu$ F/50V       | CE04W1H101M           |
| C920     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V         | CE04W1H010M           |

## 1U-2253 REAR CENTER AMP UNIT PARTS LIST

| Ref. No.         | Part No.     | Part Name            | Remarks     |      |
|------------------|--------------|----------------------|-------------|------|
| C951             | 256 1034 979 | Metallized 0.1μF/50V | CF93A1H104J |      |
| C952             | 254 4260 948 | Electrolytic 1μF/50V | CE04W1H010M |      |
| OTHER PARTS      |              |                      |             | Q'ty |
| L401             | 235 0060 989 | Inductor (121)       | 120mH       | 1    |
| L901             | 235 0060 989 | Inductor (121)       | 120mH       | 1    |
|                  | 499 0150 008 | Remocon Receiver     | SBX1610-52  | 1    |
| S901-923         | 212 5604 910 | Tact Switch          |             | 23   |
| ⚠ RL401          | 214 0127 003 | Relay (RY-12W)       | for H/P     | 1    |
| XL401            | 399 0085 006 | Ceramic Vibrator     | CSA3.27MG   | 1    |
| ⚠ S-890          | 212 9534 002 | Power SW (Push) TV-8 |             | 1    |
| ⚠                | 202 0022 008 | Fuse Holder          |             | 2    |
| *⚠ F890          | 206 1046 014 | Fuse 8A              |             | 1    |
|                  | 205 0075 038 | 3P Terminal          |             | 1    |
|                  | 204 8266 008 | 4P Pin Jack (S-GND)  | Pre Out     | 1    |
|                  | 412 3156 002 | FLD Bracket          |             | 1    |
|                  | 393 4126 002 | FLD (FIP16XM1KA)     |             | 1    |
| CN3A             | 205 0697 034 | JL Connector (F-E)   |             | 1    |
| CN5A             | 205 0697 050 | JL Connector (F-E)   |             | 1    |
| CN7A,7B<br>7C,7D | 205 0697 076 | JL Connector (F-E)   |             | 4    |
|                  | 204 8341 004 | Headphone Jack       |             | 1    |

## 1U-2252C SURROUND UNIT PARTS LIST

for multivoltage model

Same as 1U-2252 for U.S.A. model except the followings.

| Ref. No. | Part No.     | Part Name      | Remarks | Q'ty |
|----------|--------------|----------------|---------|------|
| ⚠ F890   | 206 1061 060 | Fuse 8A (250V) |         | 1    |

| Ref. No.            | Part No.     | Part Name                  | Remarks      |
|---------------------|--------------|----------------------------|--------------|
| SEMICONDUCTOR GROUP |              |                            |              |
| IC001               | 263 0560 002 | IC NJM7815FA               | Regulator    |
| IC002               | 263 0561 001 | IC NJM7915FA               | Regulator    |
| IC003,004           | 268 0072 906 | IC ICP-N10T                | IC Protector |
| IC006               | 262 1071 005 | IC NJM7806FA               | Regulator    |
| IC008               | 268 0063 905 | IC ICP-N15T                | IC Protector |
| IC009               | 262 1071 005 | IC NJM7806FA               | Regulator    |
| IC010               | 263 0683 002 | IC NJM7906FA               | Regulator    |
| IC011,012           | 268 0063 905 | IC ICP-N15T                | IC Protector |
| IC301               | 263 0206 007 | IC UPC1225H                |              |
| IC351,352           | 263 0206 007 | IC UPC1225H                |              |
| IC801               | 263 0438 008 | IC LA1266                  |              |
| IC802               | 263 0439 007 | IC LA3401                  |              |
| IC803               | 262 0719 009 | IC LM7001                  |              |
| IC901               | 262 1480 007 | IC TMP87CH00F              |              |
| IC902               | 263 0423 000 | IC M51953B                 |              |
| TR003               | 274 0151 903 | Transistor 2SD2004(P)      |              |
| TR004               | 271 0191 906 | Transistor 2SA1048(GR)     |              |
| TR005               | 273 0317 906 | Transistor 2SC2458(BL)     |              |
| TR006               | 272 0107 906 | Transistor 2SB1328(P)      |              |
| TR007,008           | 269 0029 907 | Transistor RN1204(47K-47K) | Digital      |
| TR303               | 273 0317 906 | Transistor 2SC2458(BL)     |              |
| TR305               | 273 0404 000 | Transistor 2SC4511(Y)      |              |
| TR307               | 271 0254 005 | Transistor 2SA1725(Y)      |              |
| TR309               | 273 0235 923 | Transistor 2SC1841(E/F)    |              |
| TR353,354           | 273 0317 906 | Transistor 2SC2458(BL)     |              |
| TR355,356           | 273 0404 000 | Transistor 2SC4511(Y)      |              |
| TR357,358           | 271 0254 005 | Transistor 2SA1725(Y)      |              |
| TR359,360           | 273 0235 923 | Transistor 2SC1841(E/F)    |              |
| TR801               | 273 0357 908 | Transistor 2SC2839(E)      |              |
| TR802,803           | 271 0191 906 | Transistor 2SA1048(GR)     |              |
| TR804               | 273 0222 907 | Transistor 2SC2458(Y/GR)   |              |
| TR805               | 275 0053 907 | Transistor 2SK365(BL/GR)   |              |
| TR806               | 269 0030 909 | Transistor RN2204(47K-47K) | Digital      |
| TR807               | 273 0222 907 | Transistor 2SC2458(Y/GR)   |              |
| TR808,809           | 273 0253 918 | Transistor 2SC2878(A/B)    |              |
| TR810               | 269 0030 909 | Transistor RN2204(47K-47K) | Digital      |
| TR811               | 269 0029 907 | Transistor RN1204(47K-47K) | Digital      |
| TR890,891           | 273 0235 923 | Transistor 2SC1841(E/F)    |              |
| TR902,903           | 273 0317 906 | Transistor 2SC2458(BL)     |              |
| TR904,907           | 269 0030 909 | Transistor RN2204(47K-47K) | Digital      |
| TR908               | 273 0317 906 | Transistor 2SC2458(BL)     |              |
| D017-020            | 276 0553 905 | Diode 1SR35-200A           |              |
| D301                | 276 0432 903 | Diode 1SS270A              |              |
| D351-354            | 276 0432 903 | Diode 1SS270A              |              |
| D355                | 276 0305 001 | Diode S4VB20               | Bridge       |
| D802,803            | 276 0302 004 | Diode SVC321SPA-D-2        | Varactor     |
| D804-806            | 276 0432 903 | Diode 1SS270A              |              |
| D890                | 276 0432 903 | Diode 1SS270A              |              |
| D901                | 276 0046 914 | Diode 1S2076A              |              |
| D902-909            | 276 0432 903 | Diode 1SS270A              |              |
| ZD801               | 276 0467 910 | Zener Diode HZS9A-2        |              |



| Ref. No.                                         | Part No.     | Part Name                         | Remarks                |
|--------------------------------------------------|--------------|-----------------------------------|------------------------|
| <b>RESISTOR GROUP</b>                            |              |                                   |                        |
| (Not included Carbon Film $\pm 5\%$ , 1/4W Type. |              |                                   |                        |
| Refer to the Schematic Diagram for those parts.) |              |                                   |                        |
| R319                                             | 244 2043 982 | Metal Oxide 0.22ohm, 1W           | RS14B3AR22JS(S)        |
| R321                                             | 244 2043 982 | Metal Oxide 0.22ohm 1W            | RS14B3AR22JS(S)        |
| R323                                             | 241 2380 950 | Carbon 2Kohm, 1/4W (N.B)          | RD14B2E202JNBS         |
| R325                                             | 241 2380 992 | Carbon 3Kohm, 1/4W (N.B)          | RD14B2E302JNBS         |
| R369~372                                         | 244 2043 982 | Metal Oxide 0.22ohm, 1W           | RS14B3AR22JS(S)        |
| R373,374                                         | 241 2380 950 | Carbon 2Kohm, 1/4W (N.B)          | RD14B2E202JNBS         |
| R375,376                                         | 241 2380 992 | Carbon 3Kohm, 1/4W (N.B)          | RD14B2E302JNBS         |
| R391~393                                         | 244 2051 987 | Metal Oxide 4.7ohm, 1W            | RS14B3A4R7JS(S)        |
| * R890                                           | 242 0073 000 | Carbon Composite<br>2.2Mohm, 1/2W | RC05GF2H225K           |
| R894                                             | 244 2052 986 | Metal Oxide 750ohm, 1W            | RS14B3A751JS(S)        |
| R896                                             | 244 2051 929 | Metal Oxide 820ohm, 1W            | RS14B3A821JS(S)        |
| R902                                             | 241 2387 940 | Carbon 4.7ohm, 1/4W (N.B)         | RD14B2E4R7JNBS         |
| <b>CAPACITOR GROUP</b>                           |              |                                   |                        |
| C001,002                                         | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C003,004                                         | 254 4254 909 | Electrolytic 10 $\mu$ F/16V       | CE04W1C100M            |
| C005,006                                         | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C007,008                                         | 254 4259 700 | Electrolytic 2200 $\mu$ F/35V     | CE04W1V222MC           |
| C010                                             | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C012                                             | 254 4254 909 | Electrolytic 10 $\mu$ F/16V       | CE04W1C100MT           |
| C014                                             | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C015,016                                         | 254 4256 949 | Electrolytic 100 $\mu$ F/25V      | CE04W1E101M            |
| C069,070                                         | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C075,076                                         | 254 4254 909 | Electrolytic 10 $\mu$ F/16V       | CE04W1C100M            |
| C077,080                                         | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C301                                             | 254 4260 948 | Electrolytic 1 $\mu$ F/50V        | CE04W1H010M            |
| C303                                             | 253 1179 945 | Ceramic 220PF/50V                 | CK45B1H221K<br>(DD-3)  |
| C305                                             | 253 1179 903 | Ceramic 100PF/50V                 | CK45B1H101K<br>(DD-3)  |
| C307                                             | 254 4250 929 | Electrolytic 100 $\mu$ F/6.3V     | CE04W0J101M            |
| C309                                             | 253 4536 909 | Ceramic 10PF/50V                  | CC45SL1H100D<br>(DD-3) |
| C311                                             | 253 1179 929 | Ceramic 150PF/50V                 | CK45B1H151K<br>(DD-3)  |
| C313                                             | 253 4537 966 | Ceramic 47 $\mu$ F/50V            | CC45SL1H470J<br>(DD-3) |
| C315                                             | 254 4254 909 | Electrolytic 10 $\mu$ F/16V       | CE04W1C100M            |
| C317                                             | 255 1206 908 | Film 0.0033 $\mu$ F/50V           | CQ93M1H332J            |
| C319                                             | 253 1189 917 | Ceramic 0.022 $\mu$ F/50V         | CK45F1H223Z<br>(DD-3)  |
| C321                                             | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V          | CK45F1H103Z<br>(DD-3)  |
| C323                                             | 253 1189 917 | Ceramic 0.022 $\mu$ F/50V         | CK45F1H223Z<br>(DD-3)  |

| Ref. No. | Part No.     | Part Name                           | Remarks                |
|----------|--------------|-------------------------------------|------------------------|
| C326     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V         | CE04W1C100M            |
| C327     | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V            | CK45F1H103Z<br>(DD-3)  |
| C328~330 | 253 1179 903 | Ceramic 100PF/50V                   | CK45B1H101K<br>(DD-3)  |
| C351,352 | 254 4260 948 | Electrolytic 1 $\mu$ F/50V          | CE04W1H010M            |
| C353,354 | 253 1179 945 | Ceramic 220PF/50V                   | CK45B1H221K<br>(DD-3)  |
| C355,356 | 253 1179 903 | Ceramic 100PF/50V                   | CK45B1H101K<br>(DD-3)  |
| C357,358 | 254 4250 929 | Electrolytic 100 $\mu$ F/6.3V       | CE04W0J101M            |
| C359,360 | 253 4536 909 | Ceramic 10PF/50V                    | CC45SL1H100D<br>(DD-3) |
| C361,362 | 253 4537 966 | Ceramic 47PF/50V                    | CC45SL1H470J<br>(DD-3) |
| C363,364 | 253 1179 929 | Ceramic 150PF/50V                   | CK45B1H151K<br>(DD-3)  |
| C365,366 | 254 4254 909 | Electrolytic 10 $\mu$ F/16V         | CE04W1C100M            |
| C367,368 | 255 1206 908 | Film 0.0033 $\mu$ F/50V             | CQ93M1H332J            |
| C369,370 | 253 1189 917 | Ceramic 0.022 $\mu$ F/50V           | CK45F1H223Z<br>(DD-3)  |
| C371,372 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V            | CK45F1H103Z<br>(DD-3)  |
| C373,374 | 253 1189 917 | Ceramic 0.022 $\mu$ F/50V           | CK45F1H223Z<br>(DD-3)  |
| C377,378 | 253 1151 905 | Ceramic 4700PF/500V                 | CK45E2H472P            |
| C391~393 | 256 1034 979 | Metallized 0.1 $\mu$ F/50V          | CF93A1H104J            |
| C395~397 | 255 1208 906 | Film 0.0047 $\mu$ F/50V             | CQ93M1H472J            |
| C801     | 255 1212 905 | Film 0.01 $\mu$ F/50V               | CQ93M1H103J            |
| C802     | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V            | CK45F1H103Z<br>(DD-3)  |
| C803     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V         | CE04W1C100M            |
| C804~809 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V            | CK45F1H103Z<br>(DD-3)  |
| C810     | 254 4254 938 | Electrolytic 47 $\mu$ F/16V         | CE04W1C470M            |
| C811     | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V            | CK45F1H103Z<br>(DD-3)  |
| C813     | 253 4536 941 | Ceramic 15PF/50V                    | CC45SL1H150J<br>(DD-3) |
| C814     | 253 1179 974 | Ceramic 390PF/50V                   | CK45B1H391K<br>(DD-3)  |
| C815     | 254 4254 938 | Electrolytic 47 $\mu$ F/16V         | CE04W1C470M            |
| C816,863 | 254 3056 917 | Electrolytic 1 $\mu$ F/50V (Bipole) | CE04D1H010MBP          |
| C817     | 253 1181 917 | Ceramic 0.022 $\mu$ F/50V           | CK45F1H223Z<br>(DD-3)  |
| C818     | 254 4260 906 | Electrolytic 0.1 $\mu$ F/50V        | CE04W1H0R1M            |
| C819     | 254 4250 929 | Electrolytic 100 $\mu$ F/6.3V       | CE04W0J101M            |
| C820,821 | 253 1181 904 | Ceramic 0.01 $\mu$ F/50V            | CK45F1H103Z<br>(DD-3)  |
| C822,864 | 254 4254 938 | Electrolytic 47 $\mu$ F/16V         | CE04W1C470M            |
| C823     | 254 4260 948 | Electrolytic 1 $\mu$ F/50V          | CE04W1H010M            |
| C824     | 253 1179 916 | Ceramic 120PF/50V                   | CK45B1H121K<br>(DD-3)  |
| C825     | 254 4254 909 | Electrolytic 10 $\mu$ F/16V         | CE04W1C100M            |
| C826     | 253 9031 904 | Ceramic 0.047 $\mu$ F/25V           | CK45=1E473K            |
| C827     | 254 4254 938 | Electrolytic 47 $\mu$ F/16V         | CE04W1C470M            |
| C828     | 254 4260 919 | Electrolytic 0.22 $\mu$ F/50V       | CE04W1HR22M            |

| Ref. No. | Part No.     | Part Name                | Remarks                |
|----------|--------------|--------------------------|------------------------|
| C829     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C830     | 254 4258 905 | Electrolytic 4.7μF/35V   | CE04W1V4R7M            |
| C830,831 | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z<br>(DD-3)  |
| C832     | 253 1179 903 | Ceramic 100PF/50V        | CK45B1H101K<br>(DD-3)  |
| C833     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C834     | 254 4260 964 | Electrolytic 3.3μF/50V   | CE04W1H3R3M            |
| C835     | 254 4260 906 | Electrolytic 0.1μF/50V   | CE04W1H0R1M            |
| C836     | 253 9035 942 | Electrolytic 0.056μF/25V | CK45=1E563K            |
| C837,838 | 253 4457 907 | Ceramic 750PF/50V        | CC45SL1H751J           |
| C839     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C840     | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z(DD-3)      |
| C841     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C842,843 | 253 4536 954 | Ceramic 16PF/50V         | CC45SL1H160J<br>(DD-3) |
| C844,845 | 254 4260 951 | Electrolytic 2.2μF/50V   | CE04W1H2R2M            |
| C846     | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z(DD-3)      |
| C848     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C849     | 254 4254 909 | Electrolytic 10μF/16V    | CE04W1C100M            |
| C851     | 253 1024 003 | Ceramic 0.01μF/50V       | CK45F1H103Z            |
| C861,921 | 254 4250 026 | Electrolytic 100μF/6.3V  | CE04W0J101M            |
| C862     | 254 4254 967 | Electrolytic 330μF/16V   | CE04W1C331M            |
| C890     | 254 4254 909 | Electrolytic 10μF/16V    | CE04W1C100M            |
| ⚠ C891   | 253 8014 702 | Ceramic 0.01μF/400V(AC)  | CK45F2GAC103MC         |
| C901     | 254 4250 945 | Electrolytic 330μF/6.3V  | CE04W0J331M            |
| C902     | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z(DD-3)      |
| C903     | 259 0007 003 | for Back Up 8200μF/5.5V  | SB CAP==822=           |
| C904     | 256 1034 982 | Metallized 0.12μF/50V    | CF93A1H124J            |
| C905,906 | 253 1181 904 | Ceramic 0.01μF/50V       | CK45F1H103Z(DD-3)      |
| C907     | 254 4260 922 | Electrolytic 0.33μF/50V  | CE04W1HR33M            |
| C908     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C909     | 254 4258 905 | Electrolytic 4.7μF/35V   | CE04W1V4R7M            |
| C910     | 254 4260 906 | Electrolytic 0.1μF/50V   | CE04W1H0R1M            |
| C913     | 254 4260 948 | Electrolytic 1μF/50V     | CE04W1H010M            |
| C953     | 254 4250 932 | Electrolytic 220μF/6.3V  | CE04W0J221M            |

## OTHER PARTS

Q'ty

|             |              |                     |           |   |
|-------------|--------------|---------------------|-----------|---|
| RL301,302   | 214 0129 001 | Relay (DH2TV)       |           | 2 |
| ⚠ RL890     | 214 0142 004 | Relay (TV-5)        |           | 1 |
| XL801       | 399 0075 003 | X-TAL (7.2MHz)      |           | 1 |
| CF801,802   | 261 0025 004 | Ceramic Filter      |           | 1 |
| CF803       | 261 0031 001 | Ceramic Filter      | BFU45024  | 1 |
| CF804       | 261 0079 005 | Ceramic Filter      | CSB456F11 | 1 |
| CF901       | 399 0093 001 | Ceramic Vibrator    |           | 1 |
| T801        | 231 1127 007 | MW ANT Trans        |           | 1 |
| T802        | 231 4901 000 | MWOSC Coil          |           | 1 |
| T803        | 231 2077 004 | IF DET Trans (S)    |           | 1 |
| T804        | 231 2076 005 | IF DET Trans (P)    |           | 1 |
| T805        | 231 1132 005 | AM IFT (SFL450J3)   |           | 1 |
| TC801       | 231 0041 034 | Trimmer Condenser   |           | 1 |
| *⚠ F001,002 | 206 1039 050 | Fuse 1.6AT          |           | 1 |
| *⚠ F301,302 | 206 1046 014 | Fuse 8A             |           | 2 |
| ⚠           | 203 3941 008 | AC Outlet (2P)      |           | 1 |
|             | 204 8266 008 | 4P Pin Jack (S-GND) | Pre Out   | 1 |

| Ref. No.  | Part No.     | Part Name           | Remarks | Q'ty |
|-----------|--------------|---------------------|---------|------|
|           | 205 0433 010 | ANT. Terminal (F)   |         | 1    |
|           | 205 0592 016 | 4P Push Terminal    | Rear SP | 1    |
|           | 205 0075 038 | 3P Terminal         | Trans   | 1    |
| CN12A     | 205 0698 020 | BTEM Connector (1R) |         | 1    |
| CN18A,18B | 205 0698 088 | BTEM Connector (1R) |         | 2    |
| CN6C      | 205 0697 063 | JL Connector (F-E)  |         | 1    |
| CN8D      | 205 0697 089 | JL Connector (F-E)  |         | 1    |
|           | 216 0064 007 | Front End           |         | 1    |
| *⚠        | 202 0022 008 | Fuse Holder         |         | 8    |

1U-2253C REAR CENTER AMP UNIT PARTS LIST  
for multivoltage model

Same as 1U-2253 for U.S.A. model except the followings.

| Ref. No.   | Part No.     | Part Name         | Remarks      | Q'ty |
|------------|--------------|-------------------|--------------|------|
| ⚠ R890     | —            | 2.2 Mohm (Delete) |              | 1    |
|            | 202 0220 008 | Fuse Holder       |              | 10   |
| ⚠ F891     | 206 1061 031 | Fuse 4A (250V)    |              | 1    |
| ⚠ F001,002 | 206 1035 054 | Fuse 1.6A (T)     |              | 2    |
| ⚠ F301,302 | 206 1052 008 | Fuse 8A           |              | 2    |
| S999       | 212 4659 005 | Slide Switch      |              | 1    |
|            | 415 0299 000 | Condenser Cover   |              | 1    |
| D999       | 276 0432 903 | Diode 1SS270A     |              | 1    |
| C837,838   | 253 4453 901 | Ceramic 510pF/50V | CC45SL1H511J | 2    |

PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No.     | Part Name                  | Remarks      | Q'ty           |
|----------|--------------|----------------------------|--------------|----------------|
| ① * 1    | Note         | Front Amp. Unit            |              | 1 <sup>S</sup> |
| └ 1-1    | —            | Front Amp Unit             |              | (1)            |
| └ 1-2    | —            | Front SP Unit              |              | (1)            |
| └ 1-3    | —            | Video AUX Unit             |              | (1)            |
| 2        | 214 0129 001 | Relay (DH2TU)              |              | 3              |
| 3        | 204 8342 003 | 3P Pin Jack (C-GND)        |              | 1              |
| 4        | 205 0605 000 | S-Terminal                 |              | 1              |
| 5        | 205 0635 009 | 4P SP Terminal (V-1)       |              | 1              |
| 6        | 211 0704 003 | Variable Resistor          |              | 1              |
| ② * 7    | Note         | Input Unit                 | 3 Gang VR    | 1 <sup>S</sup> |
| └ 7-1    | —            | Audio Input Unit           |              | (1)            |
| └ 7-2    | —            | Video Input Unit           |              | (1)            |
| └ 7-3    | —            | Audio Input-2 Unit         |              | (1)            |
| └ 7-4    | —            | Video Input-2 Unit         |              | (1)            |
| 8        | 204 8278 009 | 6P Pin Jack (S-GND)        | Upper Whit   | 2              |
| 9        | 204 8346 009 | 6P Pin Jack (S-GND)        | Lower Red    | 1              |
| 10       | 204 8260 004 | Mini Jack                  |              | 1              |
| 11       | 204 8309 004 | 4P Pin Jack (C-GND)        |              | 1              |
| 12       | 204 8308 005 | 3P Pin Jack (C-GND)        |              | 1              |
| 13       | 205 0678 001 | S-Terminal                 |              | 4              |
| ③ * 14   | Note         | Surround Unit              |              | 1 <sup>S</sup> |
| └ 14-1   | —            | FLD Unit                   |              | (1)            |
| └ 14-2   | —            | Surround Unit              |              | (1)            |
| └ 14-3   | —            | Headphone Unit             |              | (1)            |
| └ 14-4   | —            | Preout Unit                |              | (1)            |
| └ 14-5   | —            | Power SW Unit              |              | (1)            |
| └ 14-6   | —            | LED Unit                   |              | (1)            |
| 15       | 393 4126 002 | FLD (FIP16XM1KA)           |              | 1              |
| 16       | 214 0127 003 | Relay (RY-12W)             |              | 1              |
| 17       | 204 8341 004 | Head Phone Jack            |              | 1              |
| 18       | 211 0703 004 | Variable Resistor 100Kohm  | Motor Volume | 1              |
| △ * 19   | 212 9534 002 | Power Switch (Push) (TV-8) |              | 1              |
| △ * 20   | Note         | Fuse (8A)                  |              | 1              |
| 21       | 204 8266 008 | 4P Pin Jack (S-GND)        |              | 2              |
| ④ * 22   | Note         | Rear Center Amp Unit       |              | 1 <sup>S</sup> |
| └ 22-1   | —            | Rear Center Amp. Unit      |              | (1)            |
| └ 22-2   | —            | Tuner Unit                 |              | (1)            |
| └ 22-3   | —            | Power Supply Unit          |              | (1)            |
| └ 22-4   | —            | AC Outlet Unit             |              | (1)            |
| └ 22-5   | —            | Micom Unit                 |              | (1)            |
| * 23     | Note         | Front End                  |              | (1)            |
| △ * 24   | Note         | Fuse 8A                    |              | 1              |
| △ * 25   | Note         | Fuse 1.6AT                 |              | 2              |
| 26       | 214 0142 004 | AC Outlet (2P)             |              | 1              |
| △ 27     | 203 3941 008 | Ant. Terminal (F)          |              | 1              |
| * 28     | Note         | 4P Push Terminal           | for Rear     | 1              |
| 29       | 205 0592 016 | 3P Terminal                |              | 2              |
| 30       | 205 0075 038 | Front Chassis Assy         |              | 1              |
| ⑤ 31     | 411 1092 000 | Side Chassis               |              | 1              |
| ⑤ 32     | 411 1095 007 | Trans Chassis              |              | 1              |
| ⑤ 33     | 411 1094 008 | P.C.B Holder (T)           |              | 1              |
| ⑤ 34     | 415 9032 006 | Trans Bracket              |              | 1              |
| ⑤ 35     | 412 9160 209 | Card Spacer (H=7.5)        |              | 1              |
| 36       | 415 0597 003 | VR. Bracket                |              | 5              |
| ⑥ 37     | 412 2897 100 | P.W.B Holder (H=10)        |              | 1              |
| ⑥ 38     | 412 2741 036 | Rear Panel                 |              | 6              |
| * 39     | Note         | AC Cord                    |              | 1              |
| △ * 40   | Note         | Cord Bush                  | Polarized    | 1              |
| △ * 41   | Note         | Ant. Holder                |              | 1              |
| 42       | 146 0925 009 | Power Radiator (A)         |              | 1              |
| 43       | 417 0430 205 |                            |              | 1              |

| Ref. No. | Part No.     | Part Name                     | Remarks    | Q'ty |
|----------|--------------|-------------------------------|------------|------|
| 44       | 271 0240 006 | Transistor 2SA1491 (O/P/V)(Z) |            | 2    |
| 45       | 273 0389 002 | Transistor 2SC3855 (O/P/V)(Z) |            | 2    |
| 46       | 412 3314 006 | Spring Plate (A)              |            | 1    |
| 47       | 412 3315 005 | Radiator Bracket (A)          |            | 1    |
| 48       | 417 0429 009 | Power Radiator (B)            |            | 1    |
| ⑦ 49     | 412 3317 003 | Radiator Bracket (B)          |            | 1    |
| ⑦ 50     | 412 3316 004 | Spring Plate (B)              |            | 1    |
| 51       | 105 0965 107 | Bottom Cover                  |            | 1    |
| 52       | 104 0194 001 | Foot Assy                     |            | 4    |
| * 53     | Note         | Dangerous Mark                |            | 1    |
| △ * 54   | Note         | Power Trans                   |            | 1    |
| * 55     | Note         | Blind Sheet                   |            | 1    |
| * 56     | Note         | Inner Frame Assy              |            | 1    |
| * 57     | Note         | Knob Tact (Function)          |            | 1    |
| * 58     | Note         | Knob Tact (Function)          |            | 1    |
| * 59     | Note         | Preset Knob                   |            | 1    |
| * 60     | Note         | Tact Knob                     |            | 1    |
| 61       | 412 2814 002 | Card Spacer (L=8)             |            | 5    |
| * 62     | Note         | Front Panel                   |            | 1    |
| * 63     | Note         | P. Knob (P) Assy              |            | 1    |
| * 64     | Note         | Knob (Round)                  |            | 1    |
| * 65     | Note         | VR Knob Assy                  |            | 3    |
| 66       | 477 0096 007 | Push Rivet                    |            | 1    |
| 67       | 445 8004 007 | Wire Clamper                  |            | 1    |
| 68       | 122 0183 049 | Spacer                        |            | 5    |
| 69       | 102 0501 009 | Top Cover                     |            | 1    |
| 70       | 461 0577 039 | Rubber Sheet                  |            | 1    |
| 71       | 461 0334 007 | Rubber Sheet                  |            | 1    |
| * 72     | Note         | UL Label (1409)               |            | 2    |
| 73       | 254 4259 700 | Chemicon 2200μF/35V           | C007,008   | 1    |
| ⑧ 74     | 412 3370 008 | P.W.B. Bracket                |            | 1    |
| 75       | 477 0288 006 | Push Rivet                    |            | 1    |
| ⑨ 76     | 412 3369 006 | P.W.B. Support                |            | 1    |
| 77       | 461 0577 042 | Rubber Sheet                  |            | 1    |
| 77       | 415 0234 007 | Insulating Sheet              |            | 4    |
| 78       | 254 4400 708 | Chemicon 6800μF V             | C375,376   | 2    |
| 78       | 513 1796 042 | Fuse Caution Label            |            | 1    |
| 79       | 205 0695 007 | 2P Push Terminal (V-1)        | for Center | 1    |
| 79       | 513 1796 055 | Fuse Caution Label            |            | 1    |
| ⑩ 80     | 412 3372 006 | AC Outlet Bracket             |            | 1    |
| 81       | 445 0048 003 | Cord Holder (L=76)            |            | 1    |
| 82       | 415 0235 006 | Insulating Sheet              |            | 2    |
| 83       | 415 0609 205 | Shield Cover                  |            | 1    |


| SCREWS |              |                             |          |
|--------|--------------|-----------------------------|----------|
| 201    | Note         | Tapping Screw (S) 3×8       | Black 40 |
| 202    | 473 7007 000 | Tapping Screw (S) 4×8       | Black 12 |
| 203    | —            | —                           |          |
| 204    | 473 7511 004 | F.H. Tapping Screw (P) 3×10 | Black 3  |
| 205    | 477 0064 107 | Fixing Screw                | 24       |
| 206    | 473 7006 027 | Tapping Screw (S) 3×10      | Black 1  |
| 207    | 473 8007 009 | Cup Screw 3×12              | 4        |
| 208    | 473 7501 001 | Tapping Screw (P) 3×10      | 10       |
| 209    | 477 0276 018 | Earth Screw (S) 4×6         | 1        |
| 210    | 477 0262 006 | Special Screw               | 1        |
| * 211  | Note         | 3P. Swelling Screw          | 6        |
| 212    | 473 8007 025 | Cup Screw 3×8               | 13       |

| Ref. No.                                           | Part No.     | Part Name               | Remarks     | Q'ty           |
|----------------------------------------------------|--------------|-------------------------|-------------|----------------|
| PACKING & ACCESSORIES (not included EXPLODED VIEW) |              |                         |             |                |
| ⑪ 251                                              | 504 0092 060 | Styrene Paper           | for AC Cord | 1              |
| ⑪ 252                                              | 504 9102 029 | Styrene Paper           | for Set     | 1              |
| ⑪ 253                                              | 505 9102 019 | Poly Cover              |             | 1              |
| ⑪ 254                                              | 503 0946 003 | Cushion                 |             | 2              |
| ⑪ 255                                              | GEN 1576     | Envelope Sub Assy       |             | 1 <sup>S</sup> |
| ⑪ 255-1                                            | 505 8006 019 | Envelope                |             | (1)            |
| ⑪ 255-2                                            | 511 2164 004 | Inst. Manual            |             | (1)            |
| ⑪ 255-3                                            | 231 1129 005 | Loop Antenna            |             | (1)            |
| ⑪ 255-4                                            | 395 0019 009 | FM Ant. Assy            |             | (1)            |
| ⑪ 255-5                                            | 529 0072 005 | FM Ant. Adaptor         |             | (1)            |
| ⑪ 255-6                                            | —            | Battery                 |             | (1)            |
| ⑪ *255-7                                           | Note         | DAI Warranty Home 4     |             | (2)            |
| ⑪ 256                                              | 499 0204 006 | Remote Control (RC-139) |             | (1)            |
| ⑪ * 257                                            | Note         | Carton Case             |             | 1              |
| 258                                                | 513 1389 006 | Control Card Base       |             | 1              |
| 259                                                | 513 1349 004 | Thermal Carbon Film     |             | 1              |

**NOTE FOR PARTS LIST**

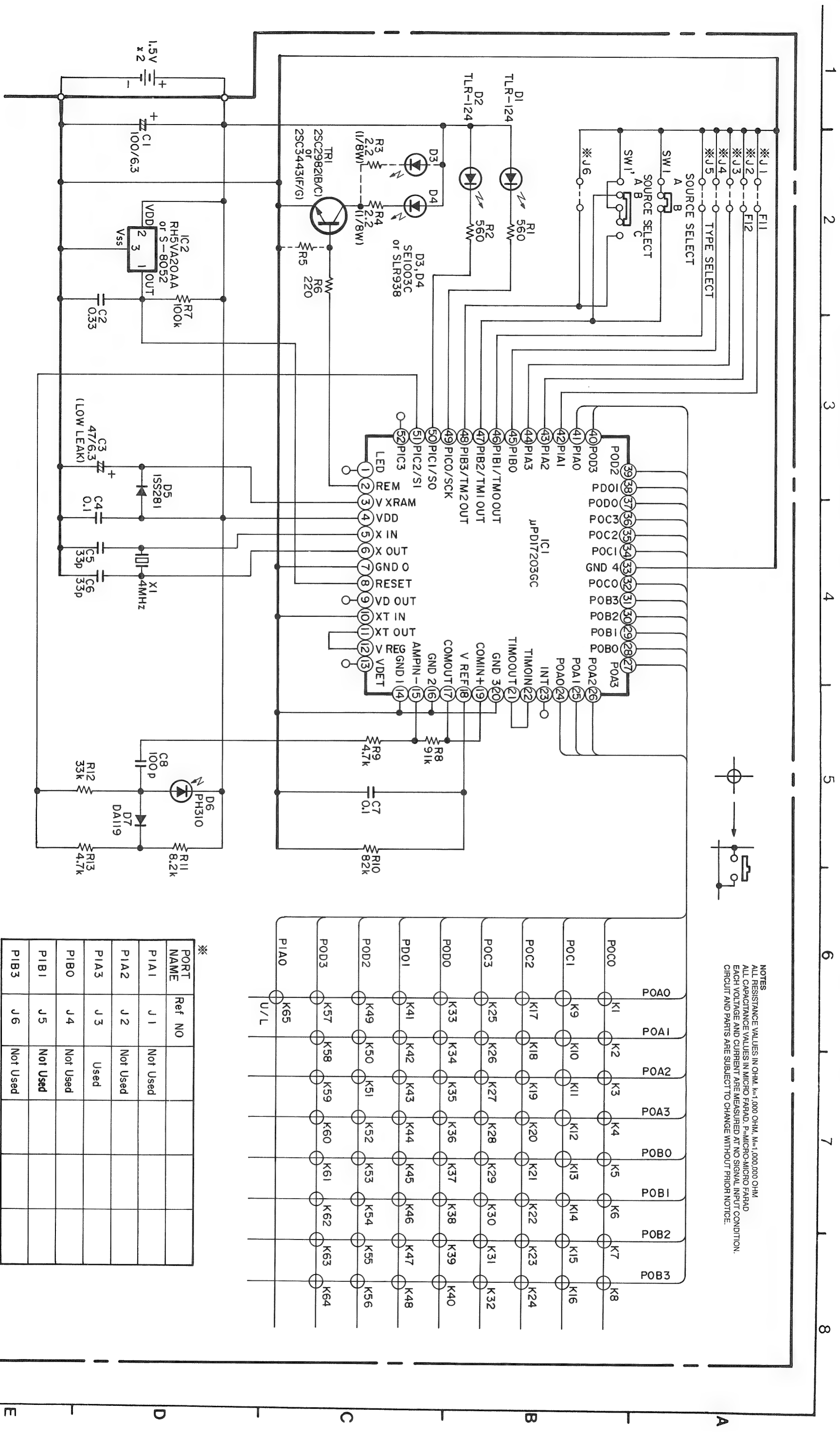
- Part indicated with the mark " ⑤ " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "1" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

**WARNING:**

Parts marked with this symbol △  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

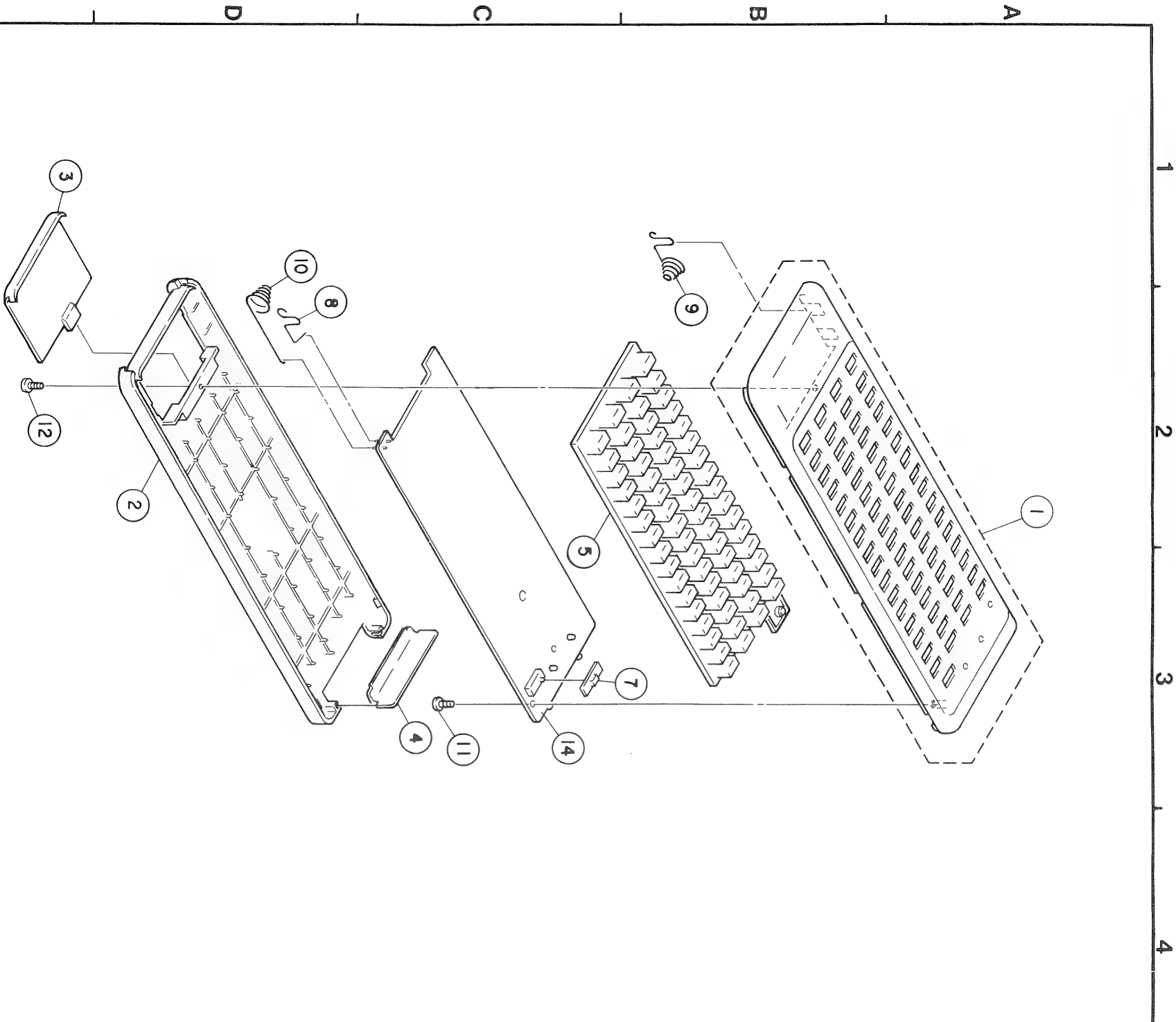
ADDENDUM LIST

| Ref. No. | Parts Name & Descriptions   | Parts No.        |                   |                         |  |
|----------|-----------------------------|------------------|-------------------|-------------------------|--|
|          |                             | U.S.A<br>(Black) | Canada<br>(Black) | Multivoltage<br>(Black) |  |
| 1        | Front Amp Unit              | 1U-2250          | 1U-2250           | 1U-2250C                |  |
| 7        | Input Unit                  | 1U-2251          | 1U-2251           | 1U-2251                 |  |
| 14       | Surround Unit               | 1U-2252          | 1U-2252           | 1U-2252C                |  |
| 20       | Fuse 8A (F-890)             | 206 1046 014     | 206 1046 014      | 206 1061 060            |  |
| 22       | Rear Center Amp Unit        | 1U-2253          | 1U-2253           | 1U-2253C                |  |
| 23       | Front End                   | 216 0064 007     | 216 0064 007      | 216 0064 007            |  |
| 24       | Fuse 8A (F-301, 302)        | 206 1046 014     | 206 1046 014      | 206 1052 008            |  |
| 25       | Fuse 1.6AT (F-001, 002)     | 206 1039 050     | 206 1039 050      | 206 1035 054            |  |
| 28       | Ant. Terminal               | 205 0433 010     | 205 0433 010      | 205 0433 010            |  |
| 39       | Rear Panel                  | 105 0964 108     | 105 0964 108      | 105 0964 140            |  |
| 40       | AC Cord                     | 206 2060 002     | 206 2060 002      | 206 2083 005            |  |
| 41       | Cord Bush                   | 445 0056 008     | 445 0056 008      | 445 0071 009            |  |
| 53       | Dangerous Mark              | 513 8266 009     | —                 | —                       |  |
| 54       | Power Trans                 | 233 5388 005     | 233 5388 005      | 233 5890 006            |  |
| 55       | Blind Sheet                 | 146 9045 100     | 146 9045 100      | 146 9045 100            |  |
| 56       | Inner Frame Assy            | 146 1268 008     | 146 1268 011      | 146 1268 008            |  |
| 57       | Knob Tact (Function)        | 113 1411 101     | 113 1411 101      | 113 1411 101            |  |
| 58       | Knob Tact (Function)        | 113 1411 127     | 113 1411 127      | 113 1411 127            |  |
| 59       | Preset Knob                 | 113 1453 004     | 113 1453 004      | 113 1453 004            |  |
| 60       | Tact Knob                   | 113 1454 003     | 113 1454 003      | 113 1454 003            |  |
| 62       | Front Panel                 | 144 2126 101     | 144 2126 101      | 144 2126 101            |  |
| 63       | P. Knob (P) Assy            | 113 9213 000     | 113 9213 000      | 113 9213 000            |  |
| 64       | Knob (Round)                | 112 0685 003     | 112 0685 003      | 112 0685 003            |  |
| 65       | VR Knob Assy                | 112 0569 103     | 112 0569 103      | 112 0693 103            |  |
| 72       | UL Label (1409)             | 513 1577 009     | —                 | —                       |  |
| 72       | CSA Label                   | —                | LL-4794 1         | —                       |  |
| 100      | Voltage Sel. Switch         | —                | —                 | 212 1020 006            |  |
| 101      | Preset Label                | —                | —                 | 515 8030 008            |  |
| 102      | Fuse (4A) (F-891)           | —                | —                 | 206 1061 031            |  |
| 103      | Slide Switch                | —                | —                 | 212 4659 005            |  |
| 201      | Tapping Screw(S) 3x8 black  | 473 7015 018     | 473 7015 018      | 473 7015 018            |  |
| 211      | 3P Swelling Screw           | 477 0263 005     | 477 0263 005      | 477 0263 005            |  |
| 215      | Washer ϕ5 (Black)           | —                | —                 | —                       |  |
| 216      | Tapping Screw(S) 4x20 black | —                | —                 | —                       |  |
| 255-7    | DA/DCI Warranty             | 515 0418 408     | 515 0388 208      | —                       |  |
| 257      | Carton Case                 | 501 1528 000     | 501 1528 000      | 501 1528 000            |  |



NOTE:USE EITHER ONE OF SW1 OR SW1'

EXPLODED VIEW



REMOTE CONTROLLER PARTS LIST  
• MECHANICAL PARTS LIST

| Ref. No. | Part No.     | Part Name         | Remarks   | Q'ty |
|----------|--------------|-------------------|-----------|------|
| 1        | 9H3 1000 094 | Case Top          | PA2106218 | 1    |
| 2        | 9H3 1000 056 | Case Bottom       | PA2106301 | 1    |
| 3        | 9H3 1000 057 | Cover Battery     | PA2106501 | 1    |
| 4        | 9H3 1000 058 | Filter IR         | PA2106401 | 1    |
| 5        | 9H3 1000 093 | SW-Rubber         | PA2108108 | 1    |
| 6        | —            | Panel             | MP2102321 | 1    |
| 7        | 9H3 1000 060 | Bottom SW         | PA2108201 | 1    |
| 8        | 9H3 1000 064 | Terminal Battery  | MASP00023 | 1    |
| 9        | 9H3 1000 061 | Spring Coil       | MASP00921 | 1    |
| 10       | 9H3 1000 062 | Spring Coil       | MAS900932 | 1    |
| 11       | —            | Screw-Tapping 2x5 | ST2005B2F | 1    |
| 12       | —            | Screw-Tapping 2x6 | ST2006B2F | 1    |
| 13       | —            | Label             | ZLAA00202 | 1    |
| 14       | —            | P.W.Board Ass'y   |           | 1    |

| Ref. No.              | Part No.     | Part Name       | Remarks   | Q'ty |
|-----------------------|--------------|-----------------|-----------|------|
| PACKING & ACCESSORIES |              |                 |           |      |
| 20                    | 9H3 1000 075 | Bag-Poly        | ZB101C301 | 1    |
| 21                    | —            | Batt. Manganese | BATA00252 | 1    |
| 22                    | —            | Sheet PC        | PA3103001 | 1    |

• ELECTRICAL PARTS LIST

| Ref. No.                  | Part No.     | Part Name               | Remarks         |
|---------------------------|--------------|-------------------------|-----------------|
| SEMICONDUCTORS            |              |                         |                 |
| IC1                       |              | μP D17203-567           | μ-Com           |
| IC2                       |              | IC RH5VA20A4            | Vol. Detector   |
| TR1                       | 9H3 1000 070 | Transistor 2SC3443BF/BG | Ti-Chip         |
| or                        |              |                         |                 |
| D1,2                      | 9H3 1000 028 | LED TLRI24              | LED-Visible-Red |
| D3                        | 9H3 1000 072 | LED SE1003-C            | LED-Infrared    |
| D5                        |              | Diode 1SS281(1)         | Diode           |
| D6                        | 9H3 1000 629 | Diode PH310             | Diode-Photo-Pin |
| D7                        | 9H3 1000 071 | Diode DA119             | Diode           |
| or                        |              | Diode 1SS196            | Diode           |
| RESISTORS (Chip Resistor) |              |                         |                 |
| J1-6                      |              | 0Ω, 1/8W                | RM73B2B0R0K     |
| R1,2                      | 247 0006 085 | 560Ω, 1/10W             | RM73B--561J     |
| R3,4                      | 247 0001 006 | 2.2Ω, 1/10W             | RM73B--2R2K     |
| R6                        | 247 0005 086 | 220Ω, 1/10W             | RM73B--221J     |
| R7                        | 247 0012 024 | 100KΩ, 1/10W            | RM73B--104J     |
| R8                        | 247 0012 011 | 91KΩ, 1/10W             | RM73B--913J     |
| R9                        | 247 0009 008 | 4.7KΩ, 1/10W            | RM73B--472J     |
| R10                       | 247 0012 008 | 82KΩ 1/10W              | RM73B--823J     |
| R11                       | 247 0009 066 | 8.2KΩ, 1/10W            | RM73B--822J     |
| R12                       | 247 0011 009 | 33KΩ, 1/10W             | RM73B--333J     |
| R13                       | 247 0009 008 | 4.7KΩ, 1/10W            | RM73B--472J     |

| Ref. No.                 | Part No.     | Part Name                  | Remarks      |
|--------------------------|--------------|----------------------------|--------------|
| CAPACITORS               |              |                            |              |
| (Chip Ceramic Capacitor) |              |                            |              |
| C2                       |              | 0.33μF/25V                 | CK73F1E334Z  |
| C4                       | 257 0014 032 | 0.1μF/25V                  | CK73F1E104Z  |
| C5,6                     | 257 0003 043 | 33PF/50V                   | CC73SL1H330J |
| C7                       | 257 0014 032 | 0.1μF/25V                  | CK73F1E104Z  |
| C8                       | 257 0004 068 | 100PF/50V                  | CC73SL1H101J |
| (Electrolytic Capacitor) |              |                            |              |
| C1                       | 254 4250 026 | 100μF/6.3V                 | CE04W0J101M  |
| C3                       | 254 4250 055 | 470μF/6.3V                 | CE04W0J471M  |
| E.U. PARTS               |              |                            |              |
| X1                       | 9H3 1000 073 | Ceramic Resonator          | KBR4.0MS03   |
| SW1                      | 9H3 1000 074 | Slide Switch               | SSSS213A     |
| OTHER PARTS              |              |                            |              |
|                          | —            | P.W.Board<br>Post Wrapping | PCBA01853    |

**KEY BOARD**

|     |     |     |     |
|-----|-----|-----|-----|
| K65 |     |     |     |
| K2  | K1  | K4  | K3  |
| K9  | K12 | K11 | K10 |
| K17 | K18 | K19 | K20 |
| K25 | K26 | K27 | K28 |
| K33 | K34 | K35 | K36 |
| K41 | K42 | K43 | K44 |
| K49 | K50 | K51 | K52 |
| K57 | K58 | K59 | K60 |
| K61 | K62 | K63 | K64 |
| K53 | K54 | K55 | K56 |
| K45 | K46 | K47 | K48 |
| K37 | K38 | K39 | K40 |
| K29 | K30 | K31 | K32 |
| K21 | K22 | K23 | K24 |
| K13 | K14 | K15 | K16 |
| K5  | K6  | K7  | K8  |



# DENON

## **NIPPON COLUMBIA CO., LTD.**

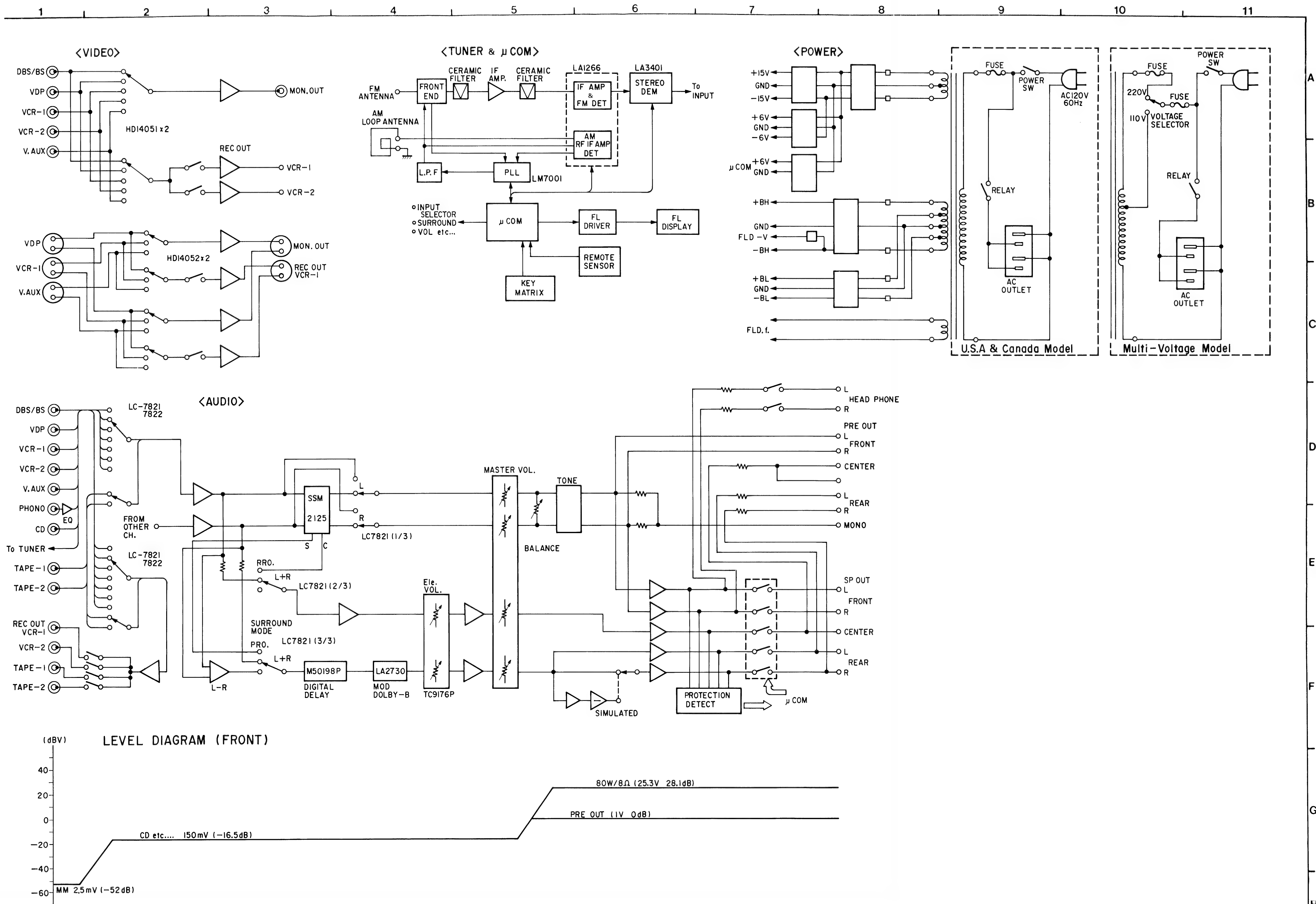
14-14, AKASAKA 4-CHOME, MINATO-KU, TOKYO 107-11, JAPAN

Telephone: 03 (3584) 8111

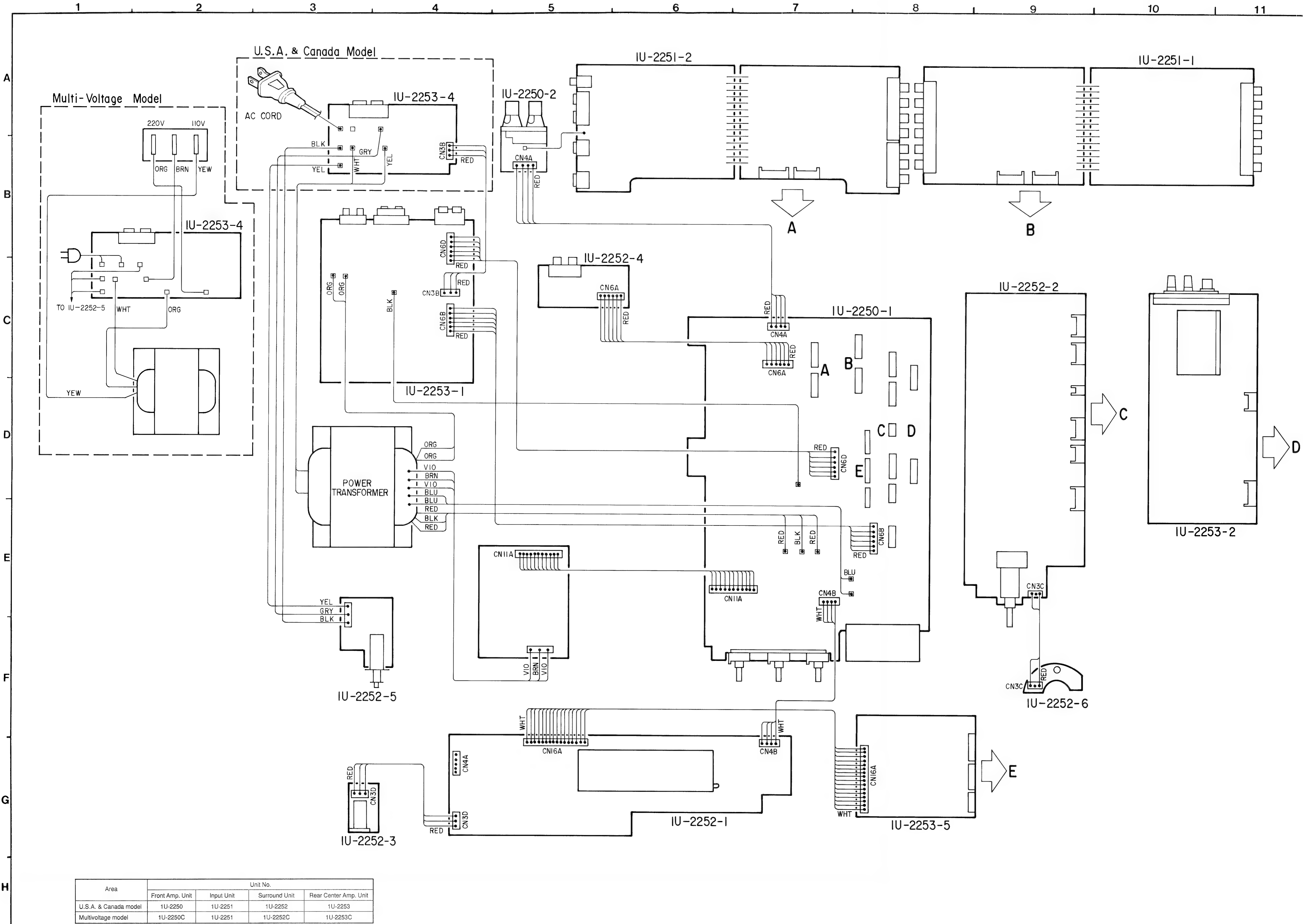
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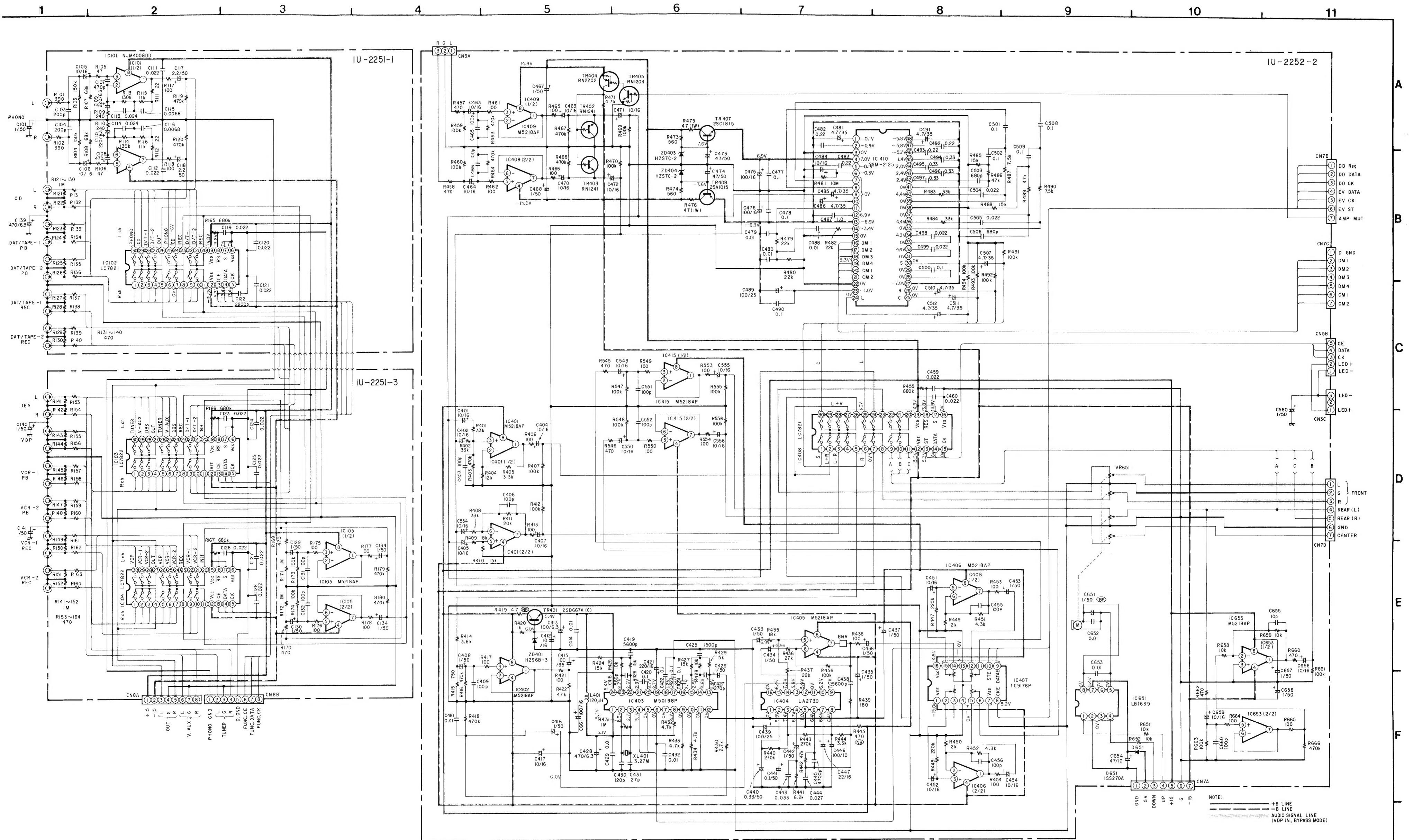
## BLOCK DIAGRAM



WIRING DIAGRAM



## SCHEMATIC DIAGRAM (1/3) Main Section



|                    | Unit No.  |            |              |                 |
|--------------------|-----------|------------|--------------|-----------------|
|                    | Front Amp | Input Unit | Surround Amp | Rear Center Amp |
| U.S.A. model       | 1U-2250   | 1U-2251    | 1U-2252      | 1U-2253         |
| Canada model       | 1U-2250   | 1U-2251    | 1U-2252      | 1U-2253         |
| Multivoltage model | 1U-2250C  | 1U-2251C   | 1U-2252C     | 1U-2253C        |

|                    | Power Trans  | C837, 838 | R824 | D999    |
|--------------------|--------------|-----------|------|---------|
| U.S.A. model       | 233 5888 005 | 750 PF    | 18K  | —       |
| Canada model       | 233 5888 005 | 750 PF    | 18K  | —       |
| Multivoltage model | 233 5890 006 | 510 PF    | 33K  | 1SS270A |

## NOTES

ALL RESISTANCE VALUES IN OHM. K=1,000 OHM, M=1,000,000 OHM  
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=PICTO-MICRO FARAD  
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.  
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

## WARNING:

Parts marked with this symbol  have critical characteristics.  
 Use ONLY replacement parts recommended by the manufacturer.

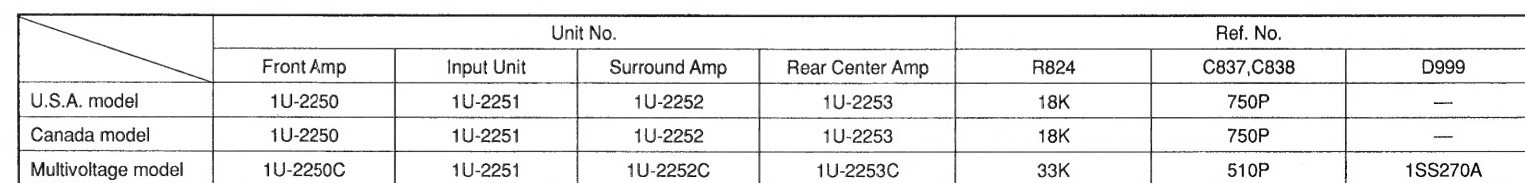
## CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamperes, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

## WARNING:

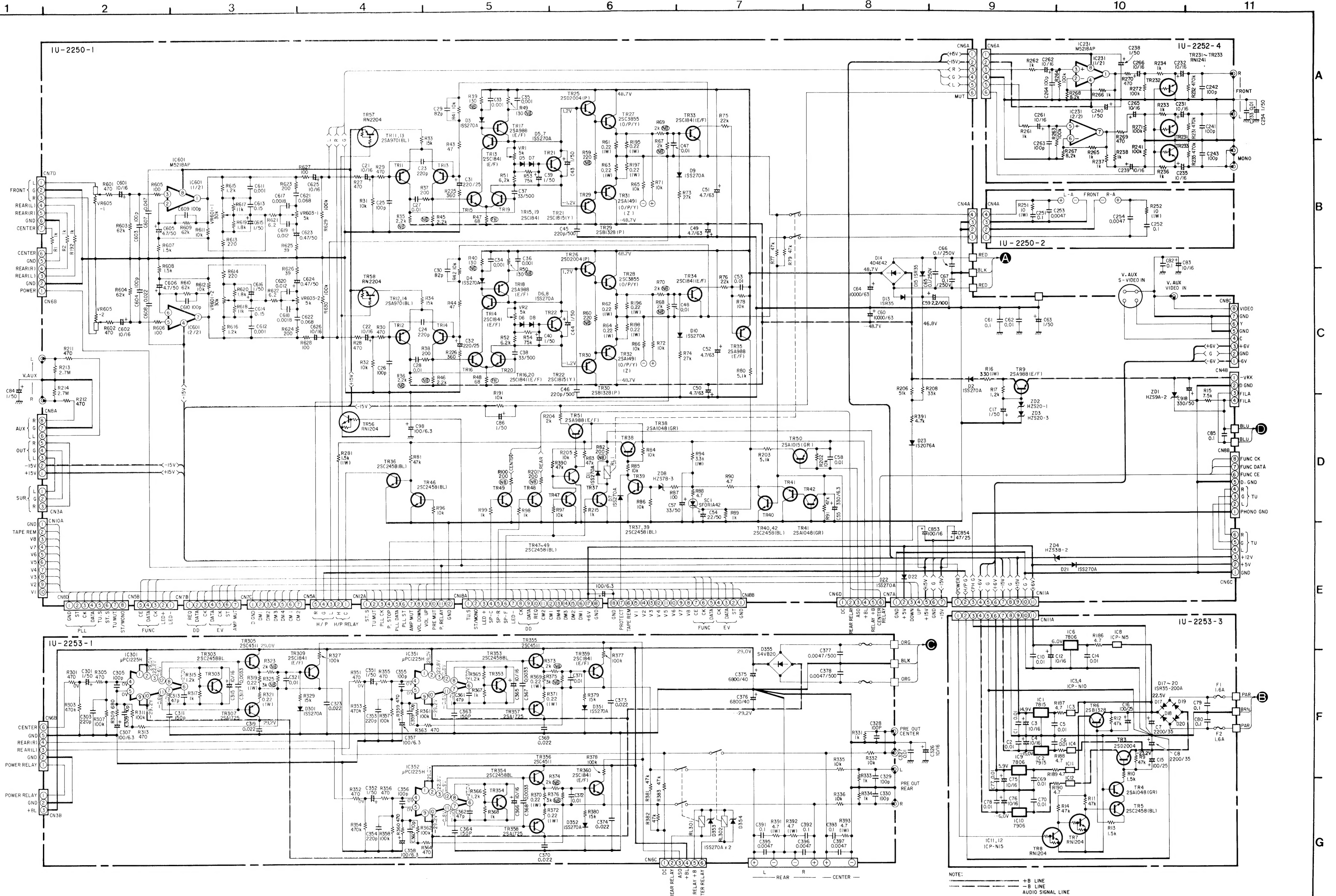
DO NOT return the unit to the customer until the problem is located and corrected.







SCHEMATIC DIAGRAM (3/3) Audio Section



**NOTES**  
ALL RESISTANCE VALUES IN OHM. K=1,000 OHM, M=1,000,000 OHM  
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD  
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.  
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

**WARNING:**  
Parts marked with this symbol  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

**CAUTION:**  
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 millamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

**WARNING:**  
DO NOT return the unit to the customer until the problem is located and corrected.

EXPLODED VIEW OF CHASSIS AND CABINET

